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WE are met to-day to honour the memory of Dr. William Wood Bradshaw. He was born at Bristol in 1801 and was educated at Westminster and Middlesex Hospitals. At the age of 43 he matriculated at Newton Hall, Oxford, and was granted a degree without any examination. He never did much practice, but it is on record that he was generous and charitable in his treatment of the poor. Sir James Paget states that "he was a home-loving and studious man who diligently cultivated his mind in both literature and art." His wife, although many years older than himself, outlived him by several years, and it was a bequest in her will which endowed this lecture in memory of her husband. I have to thank the late President of this College for the honour he has done me in nominating me to deliver the Bradshaw Lecture this year. I felt great diffidence in accepting this important position, and the doubts that I had 12 months ago as to my capacity to fulfil this duty have increased rather than lessened. The subject which I have chosen for this thesis is "Mental Symptoms in Physical Disease."

The close relationship of mind and body has long been recognised, but in practice this inter-relationship has been largely lost sight of and the tendency has been to investigate them apart to the detriment of our knowledge of each. It shows how dominated we are by tradition when we realise that it is customary for a student to pass through his medical instruction in the wards of a hospital with little or no thought given to the mental aspect of the patients he has been observing. It is true that he will hear something of hysterical manifestations, but I venture to think that this narrowed purview of mind—standing alone, as we so often find it—is misleading, for it is apt to convey to the student that hysteria is the beginning and end of functional nerve disturbance. It is encouraging to learn that the term "mental" is now generally used when reference is being made to normal mind. For this has a dual value: it brings the study of normal and abnormal mental states into closer relationship, and it emphasises the fact that the mental outlook of both the healthy and the ill man should be investigated. It must be conceded that all physical disease has a concomitant mental change just as all mind disorder is associated with variations in the bodily functions. It is true in the former the mental change in some cases may be so slight as to be patent only to the close observer, but this indicates that adaptation must have been adequate. If adaptation is incomplete or fails, the mental change will be correspondingly greater. Consequently it is the neuropath who in the first place will show nervous symptoms, as his resistances are weaker and his powers of adaptation may be small. On the other hand, if a stimulus is severe, even those endowed with a normal sensibility must suffer. That a symptom is unobtrusive and does not attract attention does not connote that it is unimportant; indeed, the more closely we study medical science, the more often do we find the converse to be true. A symptom which quickly attracts attention may be of small moment, were it not that it frequently masks something which is all-important and which can only be disclosed by a more thorough examination. Neither should mental disturbance arising in physical disease, when discovered, be treated lightly, as not infrequently it may be the deciding factor in the ultimate fate of the patient.

The close inter-relationship of all the various systems of the body is increasingly emphasised by physiologists, pathologists, and clinicians, and recent work upon the vegetative nervous system calls for further careful investigation. We are told, for example, by some that the thyroid gland is one of the defensive mechanisms of the body, and that any condition which gives rise to the sympathetic stimulation of this gland may by setting up other changes give rise to other nervous symptoms, which, again reacting upon the gland, tend to establish a vicious circle. In saying this it is necessary to add the caveat put forward by Prof. Swale Vincent in the Arris and Gale lecture delivered this year before the Royal College of Surgeons of England. He states that "in the minds of many physiologists there is a growing suspicion that the chemical regulation of the bodily functions is not of the supreme importance that certain schools would have us believe." The pure clinician is apt to seize upon an explanation which seems to fit in with any syndrome of symptoms with which he is confronted, and the physiologist working in his laboratory is apt to overlook a clinical picture which he never has the opportunity of seeing. Fortunately this is all changing and in the future we shall see clinical physicians and pure scientists working in much closer relationship.

HYPERÆSTHESIA AND PAIN.

It is important to try to discover some fundamental principles as to how and why mental symptoms develop in association with physical disease, for by so doing the task in front of us will be simplified. In that sensation is the most elementary of all conscious processes and that it is largely upon sensation that we form a knowledge of self, alteration in sensation, from whatever cause, must clearly give rise to mental symptoms. Sudden and extensive variation in sensation will give rise to more marked mental changes, but any subacute and persistent alteration will be definitely reflected in the mental outlook of the individual. For example, physical changes leading to a hyperæsthesia of the abdominal area often give rise to what is commonly spoken of as hypochondriasis and the danger is that from this time onwards the general physician is apt to regard the patient as having passed outside his province, whereas the disorder is the same except that it has extended its effect to other systems of the body. Every organ, and indeed every structure of the body, must be represented in the field of consciousness, but the stimuli arising from them only arouse consciousness of their existence when they are raised above a normal intensity. On the other hand, it is possible to obtain a relative hyperæsthesia by the lowering of sensitivity in the surrounding tissues.

Pain is one of the most common changes in sensation and because it is so common one is apt to fail to appreciate the influence it may exert upon an individual. From the philosophic standpoint pain has been regarded as something of value to the organism and as tending to favour its survival. But pain is not always related, either by its cause or by its persistency, with some definite abnormality of which it is a more or less precise indication of constant value. There is one dominant characteristic of pain and that is its tendency to persist long after the original cause has ceased to operate, and the longer it exists the more difficult it is to relieve. The importance of the matter may not end here, for in the great majority of persons pain is associated with definite mental changes, such as irritability and restlessness, neither of which can be regarded as benign symptoms. Further, sleep is interfered with and in consequence more severe disturbances of the emotio n may result. Pain evokes the same physical changes that are aroused by emotion, and they appear in order to brace the organism to face and overcome the

situation that confronts it. Now the energy that must be dissipated by the mobilising of these forces must sooner or later lead to exhaustion, which, in part, is observable by changes in the mental processes. In some persons the exhaustion is much more noticeable on the physical side, whereas in others the fatigued state is more observable in changes in the mental attitude. Certain investigations suggest that the endocrine glands once over-stimulated may remain in a state of over-activity for a long time and in consequence keep up a hypersensitive condition of the nervous system; if this is so, it is a matter of no small importance.

EMOTION AND PHYSICAL HEALTH.

Apart from severe pain there is no symptom so capable of initiating bad mental habits as discomfort. Tics are all good examples of this, but some of them lead to permanent ill-health, unless understood and suitably relieved; aerophagy is an instance of this. During the last decade, and more especially owing to the work of Déjerine, emotion has come to be regarded as one of the most important factors in the mental and physical health of an individual. It may arise from an external or an internal cause. By its suddenness or by its intensity emotion may completely overthrow the equilibrium of the subject who experiences it. As Déjerine writes, "Under the influence of an emotion a man will become incapable of any conscious action or judgment and deprived of his most elementary perceptions; feeling nothing, seeing nothing, and hearing nothing, the subject is transformed into a simple automaton." This condition may on rare occasions be lasting; it is more common to have a gradual return to normal self, but this return is by no means even and is often interrupted by a series of relapses. What I have just described must be regarded as a maximum emotion and there are gradations from the very smallest disturbance to this violent reaction. Even a lesser emotion if it lasts may set up a very definite "pre-occupation," which in turn may lead to some mental change. Every person has his own way of reacting to emotional excitation, and in some instances an external emotional stimulus, such as the shock of hearing bad news, only develops its full potency after being reinforced by internal emotion—for example, when a patient has been told some disquieting news regarding his health, or when he may have inferred from some gesture or expression of his medical adviser that his condition is serious. We may be unable to adapt to an emotion once it has arisen, and it can best be prevented or held in check by an intellectual understanding of its effect. Emotion arising from whatever cause quickly affects the appetite and digestion, and if it persists there is a steady deterioration in the body-weight and in the general health of the patient, and yet it is common to see these conditions being treated as if the error in the digestion were the primary cause, and indeed, the physician too often remains in entire ignorance of the fact that some disturbance of emotion is the real cause of the mischief. Therefore it is clearly important for every physician to have some insight into the mental make-up of his patient. Most authorities now agree that the potential neurasthenic has what may be spoken of as an emotional constitution and that even a slight emotion which persists for a long time may bring about the condition. Nevertheless, whether the emotion is severe or slight, if it occasions loss of intellectual control, it tends to the establishing of a neurasthenic state, which in turn leads to a lessening of the power of adaptation in the person so affected. In some cases the neurasthenic condition may be complex, but in others it may be limited to the disorder of function of some organ of the body. To this type belong those individuals who develop fears regarding their heart, their lungs, or indeed any organ of the body; the condition may persist long after the original emotional cause has disappeared and the patient has regained full intellectual control.

SUGGESTIBILITY IN HYPERSENSITIVE PERSONS.

The ill person is very suggestible, especially towards a morbid outlook, and any remark made by a physician may be so exaggerated and distorted as to lead to a pre-occupation of an important kind. I recall during the recent influenza epidemic the case of a woman, of a nervous type, whose illness was marked during its acute phase by profuse perspiration. She was warned to be careful not to expose the skin unduly when any sweating took place, and in consequence she kept the bed-clothes drawn closely up to her chin and food was administered by the nurse. The drenching perspiration continued for several weeks in spite of a normal temperature, and when I saw her eight weeks from the beginning of her illness she was becoming depressed and sleepless, with a fear in her mind that the perspiration indicated the presence of some more serious condition than she had yet been made aware of. In spite of the profuse sweating she had gained in body-weight, and the pulse-rate and heart condition were satisfactory. Further, it was observable that a sudden noise might occasion a free perspiration. Everything pointed to the condition being a secondary mental one, and so it proved to be, for during the week following a full explanation to her of the mental cause of the sweating, and being reassured that there were no risks attached to exposure even if she were damp and feeling cold, she only had one perspiration, and continued to make a steady and rapid recovery. The danger in this type of case is the establishment of a habit; I need hardly say that the longer the habit lasts, the more difficult it becomes to correct it. It is useless merely to tell a patient that this or that symptom is unimportant, especially if at one time it has been otherwise regarded; the medical adviser must go fully into the matter with his patient until the latter has a satisfactory understanding of his state.

Take another type of case—the patient whose illness necessitates an operation. The number of persons who break down either immediately after an operation or some weeks later is larger than some may suppose, and many of these breakdowns can be traced back to the emotional shock that the individual received when he was told that an operation was necessary. If this is true—and there is plenty of evidence to support it—it strengthens the claim that it is essential to understand the mental side of the ordinary patient. As I have already stated, emotional shock leads to pre-occupation, and pre-occupation leads to sleeplessness with its resultant nervous and mental fatigue. Highly hypersensitive persons should not be told of the need of an operation long before this is to be performed, and after any discussion of this nature the patient's sleep should be carefully watched and sedatives administered if necessary. Also, with this class of case violent purging a few hours before the operation should be avoided if possible, as this increases the danger of a nervous collapse with mental confusion after the operation. The work of Crile and Lower on surgical shock is highly suggestive and claims the attention of physicians as much as that of surgeons; they conclude that shock is a state of exhaustion which leads to changes in the brain cells, the liver, and the adrenals, and that the shock can be brought about in many ways. They recognise that there is no distinction between emotional shock and shock produced by other means; the clinical phenomena are practically the same, and they state that the cellular changes are apparently identical, and their observations lead them to conclude that the condition is brought about by an intracellular acidosis. If they are correct, disturbances of the emotions such as fear and anxiety must take a prominent place in the medicine of the future. It is noteworthy that during recent years—no matter in what direction investigations may have taken place, whether from the physiological side or the pathological study of certain physical disease, or from the purely psychological standpoint—emotion has revealed itself to be a factor of importance. Although childbirth cannot properly

be included in a thesis on physical disease, I should like here to mention a point which does not receive the consideration that it deserves. Many women, especially those in ill-health or from some cause in a fatigued state, whether this is from the disturbed sleep so common in the later months of pregnancy or whether from some stress, are in a highly unstable state by the time that labour begins. The emotion which is always present in a greater or less degree at this stage may pass the normal limits, either from dread of the ordeal which confronts the patient or from the actual suffering at the time the baby is born. Such women should be protected against this strain by taking care that the hours of suffering and the intensity of it are limited; yet too often we find that these precautions or ignored, largely on the false argument that the process is a purely physiological one. An emotional disturbance of this kind may lead to years of ill-health, even if the patient escapes a severe mental breakdown at the moment. Emotion once aroused may not settle down and nearly always leaves the person more susceptible to other emotional shocks.

When we appreciate that few persons are free from anxiety, financial or otherwise, at the time when illness overtakes them, and that added to this the patient may be fearful as to the result of his disease, it is obvious that mental changes must take place. Experimental research has shown that fear may so exhaust the organism that death may supervene. Both physicians and surgeons know from clinical observation how devastating is fear, and how some patients who face an operation or an illness under this influence die without there being any apparent reason for a fatal termination. To remove such fear if it is possible—and often it is possible—is as urgent as it would be to control persistent vomiting; yet in practice it is common to see the panic accepted by the medical attendant in a fatalistic way with nothing more than a regret that his patient is so foolishly nervous. The fearful person can usually be reassured, but he who would undertake to do this will best succeed if he has some knowledge of mind and its working. On the other hand, largely owing to ignorance on these matters and under the false belief that they are bracing up their patient, some medical men do infinite harm by their remarks, especially if these include words of reproof. It is true that one fear may for the moment replace another fear, but I need hardly say that this is highly unscientific and is no more a remedy than is a lavish expenditure of sympathy. As the lay public largely take their cue from the medical man, any words of reproach he may have thought fit to deliver will in many instances be added to by the nurse and some of the friends. Fear and anxiety, as I have already noted, bring about a condition of mono-ideation in which the patient is unable to turn his attention away from the morbid thought which seems to fill his whole mind. As he rationalises, he becomes more and more satisfied with his own interpretations. He may repress them, for, at any rate in the earlier phases of his illness, he may recognise that they do not accord with the opinions of others, but on the other hand he would gladly disclose them to anyone capable of appreciating his point of view.

THE IMPORTANCE OF SLEEP.

If the pre-occupation continues it will begin to interfere with sleep, which becomes defective both in quality and quantity. Insomnia aggravates the condition and in some persons quickly brings about serious mental changes. Crile found that sleep was the only certain means of restoring the exhausted cells in the brain or liver and adrenals. Animals become exhausted and die if kept awake continuously for seven or eight days, and yet it is not uncommon to find sleeplessness in a sick person being treated in a half-hearted way. As a profession we have become unduly apprehensive of giving hypnotics. Experience has taught me how dangerous is this outlook, for insufficient sleep—especially under certain conditions—is infinitely more damaging than any drug; as for the danger of inducing a habit by giving a hypnotic, if we omit the morphia and opium group, which should not be given, the risk is infinitesimally small. On the other hand, I believe that the physician who puts off prescribing a hypnotic as long as possible is the man who may bring about the habit he so much dreads, for he has by his methods permitted the patient to become obsessed by fear that he will not sleep, and when at last a drug is given and sleep is obtained, the patient is terrified of the experience he has passed through and of ever again having a sleepless night. Insomnia that is quickly relieved leaves no such memories, neither does it make the patient rely upon any artificial aid. I refer to this matter, as sleeplessness, like mental changes, has largely been neglected when treating physical disease, and yet insufficiency of sleep may give rise to disturbances of function in almost every system of the body, and these disturbances may complicate disease and retard recovery, even if the patient escapes more serious consequences.

HALLUCINATIONS IN THE PATIENT.

It is outside the scope of this lecture to discuss whether a psycho-neurosis may develop into a psychosis; my experience strongly favours the view that this may take place, but for the moment the point is that any mental symptoms arising in association with physical disease should receive the consideration that their presence merits. As in other matters of life, the proposition is divided into two portions: the facts, or as it is in medicine, the definite symptoms, and the inference or deductions that we make regarding those facts or symptoms. Now the body in health occasions few if any conscious sensations, and in consequence when they do arise the patient is apt to place his own interpretation upon them, and unfortunately the explanation is too often wrong. Altered sensation may be so severe as to occasion a patient to construct a definite delusion regarding it, but it is more common for him to have some fear as a result. This in turn may set up an emotive state, and this psychic reinforcement, when it occurs, greatly enhances the importance and the severity of the condition. As already stated, the disturbances of sensation may be local or diffuse, and they may be nothing more than some definite alteration in sensibility or may give rise to actual pain. Head's notable work on the mental changes that accompany visceral disease has not yet received the attention which it deserves and which must some day be accorded to it, and it should be re-read in the light of more recent psychological work. He pointed out the varied moods that may arise in conjunction with pain of the reflected visceral type and the superficial tenderness which accompanies it. He states that "although reflected visceral pain seems to be the one universal concomitant of these mental changes in cases of visceral disease amongst sane persons, other factors predispose to their appearance," but in the cases upon which he based his investigations he rigidly excluded all those in which there was a heredity of insanity or epilepsy. In addition to altered moods, Head found that under certain conditions some persons suffering from visceral disease are liable to develop hallucinations of sight, of hearing, and of smell. He further found in those persons who had visual hallucinations that superficial tenderness of the visceral reflected type was present over the forehead in every one of the cases, whereas in those who exhibited auditory hallucinations the tenderness was present in the vertical and parietal regions. The importance of the condition is not so much the sensory disturbance as the emotion that such a phenomenon may set up in the patient. It does not require a great imagination to appreciate what a disturbing effect these sudden hallucinations may have upon highly sensitive persons, and it is no cause for surprise that many of them draw the inference that their minds may be going. As they are sane persons, their fear may be quickly allayed when the true nature of the disturbance is explained to them, but

the tragedy of the situation is that, owing to the neglect of a systematic investigation of the mental aspect of a case by the general physician, the latter is often not conversant with the phenomena we are describing, and either he is unable to reassure his patient or—what is worse—he conveys to him the doubts that he has in his own mind. Many of these hallucinations are hypnagogic, and occur when the patient is in a half-asleep and half-awake state. On the auditory side the sensory disturbances may take the form of tapping, knocking, bells, musical notes, the name called, and even at times a few words. When they first occur the patient is startled, and this gives rise to palpitation and a feeling of apprehension.

Head states that when visual hallucinations arise in visceral disease, in all the cases he observed the object appeared white, black, or grey—never coloured or even tinted. He found that almost every patient felt frightened with the first hallucination of vision, as is usual with the auditory type, but that if the hallucinations were frequently repeated, self-control returned. This again must largely depend upon reassurance by the medical attendant.

MENTAL SEQUELÆ OF POISONING.

Visual hallucinations may be and are a prominent symptom, often of diagnostic value, in another type of physical disease—that is, in states of toxæmia. Here the hallucinations may be only a part of a general altered mental state, for, if the poison is active, the patient usually soon becomes very confused and may even be delirious. Nevertheless, it is important to differentiate these cases from other types of mental disorder, as the mental changes may be very evanescent, passing quickly away when the intoxication is relieved. In such cases the natural resistance may be lowered and the tendency of the patient may be to react by mental changes. It is very necessary to recognise the syndrome of symptoms arising in these toxæmic conditions, as, for example, their presence may be the first indication of pus. I have known several cases where I have been called in owing to mental disturbance and, finding mental confusion with visual hallucinations and general restlessness, I have suggested a search being made for some localised pus, and on this being subsequently found and evacuated, the patient has made a rapid recovery. Mental disorder is not haphazard in character, and the better we understand the grouping of its symptoms the more accurate we shall become in the diagnosis and prognosis of any given case.

Now we know that certain persons are hypersensitive to particular proteins and that this hypersensitivity may precipitate a mental disturbance. I have seen three cases of violent delirium following upon the ingestion of mushrooms; in two of them there was no evidence of the taking of the mushrooms until the patients recovered, yet it would have been unfortunate if they had been certified as insane whilst suffering from what was nothing more than an unusual reaction to a particular protein. We are only upon the threshold of understanding the effect of any foreign protein taken into the body, but both clinically and experimentally it is recognised that striking effects may follow quite insignificant dosage. It must be borne in mind that the effect may be more physical than mental, or vice versa, and consequently there must be every gradation between the two, and though the bodily symptoms may be the more common it is none the less important to seek for and to note any functional nervous change. The following case illustrates the importance of appreciating mental symptoms in their true light and shows their diagnostic value.

An ex-soldier, who joined the Horse Artillery in 1915 and had passed through three and a half years of active war service without suffering from any sickness or having been in any way injured, was demobilised in 1920, and on Oct. 4th of that year went to the Woolwich Section, Bramley, as a shell inspector. On Dec. 21st he was put to remove fuses, and was then brought into direct contact with tri-nitro-toluene, commonly known as T.N.T., in a pure form. On the 31st he began to complain of headache, and as it became increasingly severe, he left his work and walked home, a distance of 12 miles. He stayed in bed but did not sleep at all that night. Next day he saw his medical attendant, who prescribed for him, but he got no relief from the pain in his head, his memory was noted as beginning to fail and he remained sleepless. Restlessness supervened and he gradually became delirious; he was removed to a mental hospital on Jan. 4th, 1921, as a person of unsound mind. On the 7th I found him suffering from acute mental confusion of the delirious type, clearly occasioned by some poison. The syndrome of symptoms was not that of an ordinary insanity and the onset of the illness was entirely dissimilar. Further, he had never had any mental illness before, neither was there any history of mental disorder in his family. There was no evidence that he had been exposed to any other acute poison. His illness followed the course commonly observed in toxic cases; the headache ceased soon after he got to hospital, sleep began to return, and by June, 1921, he was quite well.

I mention this case more especially because some opposition was at first raised to the diagnosis on the ground that T.N.T. was not known to produce mental disturbance. It is known to produce headaches and violent headaches, and if this occasions acute sleeplessness, mental deterioration may take place rapidly in certain persons. Any poison may produce mental disorder provided the person who takes or absorbs it, by his special idiosyncrasy, reacts in this way. This case is of further value as illustrating the danger of regarding physical and mental diseases as in separate categories according to which group of symptoms is the more in evidence. It is true that this is done to a much less extent than in former times, but we are not yet free from the pernicious tendency.

GESTURE, EXPRESSION, AND POSTURE.

I do not think that I could be charged with misrepresenting the facts when I say that too little heed is given to gesture, expression, and posture. There are well-recognised diseases in which characteristic changes in any one or more of these are noted, and they may constitute important links in the syndrome of symptoms which go to establish the diagnosis of such diseases, but, generally speaking, little or no remark is made about them. Yet to the truly observant person gesture-language will convey as much as, or more than, words, which may be misleading, while gesture seldom is, for it is complex, the outward and visible sign of inward sensation and emotion. Maudsley, in his book on "Pathology of Mind," says: "What is mind-reading but muscle-reading through movements so fine as to be discernible only to a practised sensibility?" Physicians of long experience acquire it, but it is a matter of too much importance to be left for time to teach and the student should be trained to appreciate it. He learns that physical pain, especially of the visceral type, is shown by the lower part of the face, but the tremor set up by strong and intermittent nerve currents transmitted to the various muscles may be of almost equal importance. Apprehension, anxiety, depression and pre-occupation of any kind are all reflected by expression and gesture. The man who can observe can inquire, but he who sees but does not perceive is left in ignorance unless the information is disclosed to him by the patient himself. Further, even if noted, evidence of emotion such as tremor and the like is commonly explained away without any real investigation being made. Persistent disorder of conduct usually leads to further inquiry unless it is regarded as purely "hysterical," but owing to the loose way in which this term is frequently used abnormal behaviour may be wrongly regarded. The conduct may become undisciplined, and there may be a general restlessness; this is common in some forms of heart disease, and even commoner in exophthalmic goitre. Further, these

may be the first symptoms to attract attention, and in any case they should never be looked upon as unimportant. Conduct may be disordered either by over-activity or by under-activity; great muscular response may take place with slight stimuli or the inertness may be such that even with powerful stimulation the response is small, while between these two extremes stand infinite variations. A change of conduct which originates in the course of some disease may persist after the latter has passed away unless steps are taken to remedy it, for such a change may become a pure habit. If, on the other hand, the patient's attention is drawn to the symptom, and it is treated as part of the illness, it not uncommonly disappears as recovery takes place.

DISORDERS OF THE ENDOCRINE SYSTEM.

Disorders of the endocrine system are at the present time attracting most attention as examples of the close relationship of mind and body. Here the disturbance may have its beginning either from the psychical or from the physical side. Dr. Hector Mackenzie in the Bradshaw Lecture which he delivered in 1916 dealt very fully with the relation of exophthalmic goitre to mental disturbance, and he showed that not only was it common, even up to one-third of his cases, to find the onset of the illness preceded by some more or less severe mental shock or strain, but that marked nervous and mental disturbances might arise in the course of the disease. My experience fully bears out his statements and the history of cases which developed during the late war all goes to show the close relationship of nervous and mental processes with the thyroid gland. The stimulation of the sympathetic nervous system and of its coadjutors, the adrenals and the thyroid, results in a mobilising and rapid expenditure of reserves, and for the time a heightening of all the vital processes. It is a katabolic action and yet, owing to the quickening of metabolism, it is at first associated with a feeling of well-being, which may be so strong as to produce a mildly exalted state. But, should this continue, exhaustion, with all its usual mental and physical concomitants, must sooner or later result. Apart from emotion, the feeling tones associated with disease are important to note and understand, otherwise the affective changes in the patient may be seriously misleading. One of the most remarkable and yet most common instances is the buoyancy of spirits to be observed in certain patients on the days immediately following an operation. Although this brightness may, to a small extent, be due to the relief of mind that the ordeal which has been weighing heavily on the patient is now successfully past, another cause, if certain authorities are correct, would seem to lie in the stimulation of the sympathetic nervous system and the endocrine glands, one of whose functions they say is to protect the organism in time of stress. Too often one sees this cheerfulness, from whatever cause, misinterpreted, and the physician or surgeon who looks for a rapid result welcomes this attitude as an indication of returning health, and all too frequently it encourages him to abandon the rules of carefulness and to permit his patient to do things which hasten the onset and increase the severity of the exhaustion which must follow. If a patient is depressed or unduly elated, an endeavour should be made to discover the cause, and when I speak of these conditions, I do not refer to states of melancholia and mania which are usually spoken of as insane conditions. There are many variations in affective tone: some may be temperamental and some rhythmic, but others may be due to metabolism changes. I have long remarked upon the sense of well-being which is so commonly associated with a fall in the body-weight; it is probably one of the most deceptive mental attitudes found in human life. During the war many of the civilian population who lost considerable body-weight owing to the restriction of food commented on how much better they were for it; some, no doubt, were better because their reserves were abundant, but others learned to their sorrow that this betterness was ephemeral and that a period of ill-health awaited them.

CONCLUSION.

Time will not permit of my treating this subject in a detailed way: all that I can attempt to do is to indicate some of the larger groups of disorder. The mental reaction of every person to disease is individual, though it is always the same for that person; nevertheless, the reaction is not haphazard, but follows rules and progresses in an orderly way, and it is therefore incumbent upon us to discover the principles which regulate it. The more elemental the mind the easier the problem becomes, and for this reason to study the mental reactions of children to disease is the most helpful method of approach, for in later life the experiences that an adult has passed through add their colouring to the fundamentals which underlie them. The tendency, or indeed I might say the universal custom, in the past has been to regard man as he appears; we have a face-value standard of mental and physical health, but we never rely upon the latter in the way in which we are prepared to accept the former. If we desire to be exceptionally careful, we examine the bodily health together with the functions of such organs as we consider to be important. If these are satisfactory, the patient is regarded as an A man, notwithstanding that the mental outlook may be scarred with former illness. There is no better example of the danger of specialising than the study of mental and physical medicine; theories become practice, and man has been viewed from these two standpoints, which at some periods have been so divorced as to have little or nothing to do with each other. The physiologist and the bio-chemist have been slowly linking these divorced subjects together, and it is now the duty of all clinicians to widen their vision, and not only to make use of the beginnings that have already been made, but also to add to their knowledge by a systematic investigation of mind states in all physical disease. We shall find that mental symptoms have their value and that whilst some are primarily hurtful others may be largely, if not entirely, protective to the organism and may form part of its armament in its struggle to survive. But, as with all functional disturbance, they may remain long after their purpose has ceased to exist. Habit is the state towards which everything is working, and it is one of the duties of the physician to see that baneful influences do not persist if it is possible to correct them. The physical hygiene of the future must include a knowledge of mental hygiene just as mental hygiene must take note of the welfare of the body. From this several advantages will accrue: mental processes will be better understood and mental changes will become matter of commonplace; fears of insanity will be replaced by an enlightened understanding, and the incidence of the graver forms of mental disorder will be lessened.

DINNER TO EMERITUS PROFESSOR H. BRIGGS.—On Oct. 21st Prof. Henry Briggs was entertained to dinner in the Adelphi Hotel, Liverpool, by his colleagues and friends. A large gathering was presided over by Major Mark Rathbone, chairman of the Committee of the Liverpool Ladies' Charity and Lying-in Hospital, who proposed the health of the guest of the evening. The toast was supported by Vice-Chancellor Adami, Dr. John E. Gemmell—in absentia—Dr. Hayward Willett, Dr. John Hill Abram, President of the Medical Institution, Dr. C. J. MacAlister, Mr. Rushton Parker, Colonel Barnes, and Miss F. Ivens. All the speakers bore testimony to their high opinion of Prof. Briggs as a man, a scientist, a brilliant operator, and a great organiser, and paid tribute to the splendid work he had done in establishing and bringing to a high pitch of perfection the department of obstetrics and gynæcology in the University of Liverpool. Prof. Briggs thanked the gathering for the honour paid him, and recounted the many difficulties he had faced, and the obstacles he had overcome in an endeavour to secure adequate opportunities for the instruction of his students in obstetrics, and in making his department in the University one of the finest of its kind in the country.

Presidential Address
ON THE
ASSESSMENT OF ELDERLY LIVES FOR LIFE ASSURANCE.

Read before the Assurance Medical Society on Nov. 1st, 1922.

BY R. A. YOUNG, C.B.E., M.D., F.R.C.P. LOND.,
PHYSICIAN TO MIDDLESEX HOSPITAL AND TO THE LONDON LIFE ASSOCIATION.

THE elderly insurance proposer generally fills me with a mixture of anxiety, apprehension, and suspicion. He frequently proposes for a very large sum, he is garrulous or unduly reticent, and in either case is often forgetful of vital details, when pressed for information. Not infrequently he is inclined to resent a careful examination, which he almost regards as a personal affront after his assurance that he has not had to consult a doctor since boyhood; or, worse still, he informs one that he has consulted his own doctor a few days before, who is usually reported as having regarded him with undisguised admiration as a splendid specimen for his years.

Having confided in my actuarial friends, or perhaps, to be more accurate, having inadvertently shown my sentiments, either in my reports or in my discussion of them, I was surprised to find that so far from sharing my anxieties, they looked upon elderly lives as desirable from an insurance point of view—with the significant proviso—if they were subject to careful medical selection. Thus, though my suspicions and apprehensions were allayed, my anxieties were, if anything, increased, for I could not forget that in this matter, nemesis usually comes swiftly. An early claim in the case of a young life can often be explained adequately, to one's own comfort, if not to the appeasement of the actuary and the board, as the "act of God or the King's enemies," whereas in the elderly, the death certificate, with its significant space for duration of the primary and secondary causes, may show all too clearly that an error of judgment has been made, that some facts have not been given their due weight, or that something important has been missed.

When I came to look up the literature of the assurance of elderly lives, and especially our own Transactions, I found very little—a few casual references, but very little explicit. Poets, philosophers, physicians, and politicians have all excogitated the problems of old age and, in this connexion, I should like to quote the historian Gibbon, who wrote in his later days:—

> "I shall soon enter into the period which, as the most agreeable of his long life, was selected by the judgment and experience of the sage Fontenelle. His choice is approved by the eloquent historian of nature, who fixes our moral happiness to the mature season in which our passions are supposed to be calmed, our duties fulfilled, our ambitions satisfied, our fame and fortune established on a solid basis. In private conversation, that great and amiable man added the weight of his own experience; and this autumnal felicity might be exemplified in the lives of Voltaire, Hume, and many other men of letters. I am far more inclined to embrace than dispute this comfortable doctrine. I will not suppose any premature decay of the mind or body, but I must reluctantly observe that two causes, the abbreviation of time, and the failure of hope, will always tinge with a browner shade the evening of life."

I think these two factors—the abbreviation of time and the browner shade—well express the problems we have to face in the assessment of the elderly insurance candidate; but our actuarial colleagues' statistics show that Gibbon's failure of hope is unduly pessimistic.

The responsible post of President of this Society carries with it the duty and the privilege of delivering an address before you. I determined to use this opportunity to exploit my own difficulties, nourishing a double hope—that some of them might be lessened by being faced, and that I might educe the experience of those present on some of the more complex problems. The subject is, in my opinion, one of increasing importance. I believe the number of elderly proposers has increased in recent years. In the war period it was obvious, because so large a proportion of the younger generation was engaged in the war and was thus only insurable at special rates. It is still apparent, partly, I believe, because of the heavy death-duties and partly because of the high income-tax rate and the uncertainty of investment returns. I feel that I may be open to criticism in choosing the age of 50 as the dividing line between middle age and the elderly period of life's span. It is a rubicon which is liable to recede in our view (or our wishes) as we ourselves mount up on the tally of years; yet the late forties and early fifties represent in many a sort of male climacteric. I admit that in the period from 50 to 60 some men show great intellectual and business activity—a sort of Indian summer of life—yet at 50 involution processes are already in progress, and degenerative changes may be commencing or even giving clear evidence of their existence. Gibbon's browner shade is already apparent. It is our duty, in the medical examination of elderly lives, to endeavour to determine if these processes are in excess of the normal, to weigh the effects of the proposer's past history upon his prospects of longevity, and to consider how he stands in regard to a hypothetical average standard for his age. In assessing an elderly life, I feel that it is of the utmost importance that the examiner and a fortiori the head office assessor should have the fullest information as to the proposer, his family and personal history, and even as to the proposal.

THE FORM OF PROPOSAL.

The nature of the proposal and even the motive for insurance are of importance, particularly in elderly persons, who have not previously insured. These questions may be of little moment to the medical examiner in the case of a young life. They are matters for the actuary and the board. In an elderly life, however, they may put the examiner on his guard, and possibly enable him to protect the office against adverse selection by a proposer, suspicious or actually cognisant of some unfavourable factor in his life's outlook. In an elderly proposer seeking insurance for the first time, with no obvious or declared motive, it may be wise to inquire very closely into the recent medical history, particularly as to any recent medical examination, or specialist consultation, or as to the recommendation of any special dietary or curtailment of activity in any direction. Loss of weight, increasing dyspeptic manifestations, and urinary difficulties, may all give useful hints and suggest caution.

FAMILY HISTORY.

Practically all insurance officials attach great importance to family history. It is certainly a valuable factor in young lives, by adumbrating family tendencies or liabilities to hereditary diseases such as tuberculosis, diabetes, or gout; but in the elderly it is of at least equal importance, if not greater. Longevity is certainly a family characteristic, and many instances of remarkable family longevity are on record. Special examples must be familiar to all of us. Such a familial tendency to longevity may warrant us in passing over lightly some minor personal defect. Conversely, a family tendency to early death, especially from degenerative or cardio-vascular diseases, should make us look closely into the personal tendencies, habits, and present condition of a proposer, since early indications of these changes will require to be recognised, and if found they may demand a heavy rating. This matter was happily summed up by the late Sir William Osler: "Longevity is a vascular question, which has been well expressed in the axiom that 'A man is only as old as his arteries.' Entire families sometimes show this tendency to early arterio-sclerosis—a tendency which cannot be explained in any other way than that in the make-up of the machine bad material was used for the tubing." One should recognise that deaths from angina pectoris,

cerebral hæmorrhage, early heart failure, and chronic interstitial nephritis may all be an expression of such an inherited weakness.

A family history of gout is much less frequently given nowadays than formerly. Typical gout is certainly less common than it was a generation or two ago. This may be due in part to our improved methods of diagnosis, whereby the septic arthritis or rheumatoid arthritis groups are separated out, and in part due to altered methods of life and lessened consumption of alcoholic liquors. A family history of gout should make us look closely at the cardio-vascular system of the proposer. If he gives a personal history of gout as well, the age at death of the parent who suffered may be an important factor in assessing the life, but in any case some rating is usually necessary.

A family history of tuberculosis in a proposer of 50 is of little or no importance, since the effects of inherited tuberculosis diathesis have, as a rule, manifested themselves before this age. This whole question has been fully and clearly brought before us recently by Dr. Otto May in his admirable paper given on Nov. 5th, 1919. At the same time, we must not forget that death from pulmonary tuberculosis is common at the latter end of life; indeed, it is as common per thousand living at 60 as at 30, so considerations of build and personal history must be given due weight in regard to this disease at any age. Epilepsy, insanity, and suicide in the family history are of importance, particularly if they occur in more than one member, and they demand a careful consideration of the proposer's own temperament, mode of life, environment, and occupation.

A family history of cancer is a difficult matter to give a definite pronouncement upon. The belief is widely held that there is a hereditary factor in this condition. The statistics of cancer hospitals seem to lend no support to this view. It may, therefore, be doubtful whether any rating is necessary unless the proposer has some personal defect or abnormality which may be regarded as predisposing to malignant growth, such as warts, undescended testes, or leukoplakia. In such cases, or in cases where several members of a family have had malignant diseases, I usually advise an endowment policy at 60 or 65, on the supposition that even if there is no hereditary tendency, there may be some common factor such as locality or occupation which may be concerned in the family incidence. A marked family history of diabetes must be taken note of, and if there is any evidence of glycosuria or other metabolic disorder, such as obesity, it will probably demand a rating.

I have dealt with family history at some length, because I am convinced of its great importance in this connexion, and also because it may give hints for special inquiry in the personal examination. Unfortunately, elderly insurance candidates are often very hazy as to details of their family history. Whenever possible these should be insisted on and verified by certification if necessary. It may sometimes be helpful to inquire into the age and cause of death of grandparents, and, strangely enough, information on these points is often more readily obtainable than in regard to brothers and sisters.

PERSONAL HISTORY.

The personal history requires most careful consideration in regard to elderly lives, and it should always be closely scrutinised *before* the actual examination, since it may suggest special investigation of some organ or system. It would take too long to consider this question in any detail, since it involves practically the whole range of insurance medicine. I may, however, briefly allude to certain specially important factors.

A proposer with a history of many *minor maladies*, or with that of one or two severe ones completely recovered from, need not necessarily be a less satisfactory life than one who has no history of previous illness; indeed, I often look very carefully at the proposer of 55 or over who has "never had a day's illness." His breakdown is often rapid and complete when it does occur, especially if he has in any sense abused his heritage by over-indulgence or overwork.

The past history of *syphilis* is of the utmost importance, and the most careful details as to manifestations and treatment should be obtained. In my opinion no proposer over 50 with a history of syphilis should be taken for a whole life policy without an extra, since the risks of late syphilitic manifestations involve so much more than those of tabes and general paralysis; there are the vascular changes, the increased liability to tuberculous disease, and the effects of strain, both physical and mental, to be borne in mind. If there is the slightest stigma of tertiary syphilis in the history or in the person of the proposer, the risk is a typically increasing one, and demands either a rating, a limitation of the period of risk, or even declining. In this connexion we must not rely too much upon the history of a negative Wassermann reaction some years before. It is a useful indication; but it is certainly not an infallible guide, as the neurologist has taught us.

A history of any defect or affection of the *circulatory* system necessarily requires most careful consideration. Palpitation, giddiness, syncope, or dyspnœa may each and all give a valuable clue to circulatory stress and they should not be glossed over. The proposer's explanation may be honest, but erroneous. In looking at the papers of claims due to circulatory disease, I have been struck with the frequency with which these symptoms are mentioned in the proposer's statement but have been ignored in the assessment. Actual valvular disease at 50 or over, even though well compensated, must be reckoned with. Such a case demands a considerable rating. There is certainly diminished cardiac reserve compared with the normal, and the life is damaged. A definite extra or a time limit for the risk should be insisted on.

Varicose veins, perhaps, hardly receive the notice they deserve in the elderly proposer. The veins should always be inspected, and their situation and extent noted. A history of phlebitis suggests care and a probable extra. This should be insisted on, if the veins are in the thigh or if the collateral circulation extends up to the abdominal veins. Pulmonary embolism is a real danger and leads to some disquieting claims. A history of pulmonary embolism after an abdominal operation such as appendicitis, need not necessarily lead to an extra, even if some signs of pleural thickening and adhesion remain.

A history of an anginal seizure, in my opinion, should mean declining. We may try to interpret a single or an occasional seizure as pseudo-anginal. Tobacco and dyspepsia may admittedly cause pain of anginoid character; but it is certainly not a condition on which we can afford to give the proposer the benefit of the doubt. Sudden death not infrequently occurs in cases in which the earlier attacks are of dubious character and in which the blood pressure is not unduly high between the attacks.

Of *respiratory* conditions emphysema, bronchitis, asthma, hæmoptysis, and pleurisy, as well as tuberculosis and pneumonia, in the past history require careful consideration, especially in regard to the physical condition of the proposer at the time of examination. Emphysema and a tendency to chronic bronchitis involve definite risks, and risks which increase with the age of the proposer. They certainly tend to shorten life, and they impose limitations both in regard to place of residence and activity of life, and accordingly they may demand a considerable extra. Asthma is often regarded as of little importance, probably because of a rather foolish popular belief that people do not die of it. It is true that death in a paroxysm is rare; but asthma and its sequelæ tend to shorten life. It requires most careful consideration, and in most cases needs an extra, either in the form of an addition to the premium, or in a limitation of the term of assurance. Its effects increase with each year of age, and it should not be forgotten that when it begins in middle or advanced life, it may be the result

of cardiac or renal disease. A history of several attacks of pneumonia suggests care, as indicating an abnormal susceptibility to the disease. We may hope that in the future protective inoculations will lessen this risk almost to extinction. A past history of pleurisy should suggest careful inquiry and examination, particularly as to the occurrence of effusion, since, as we all know, this is usually tuberculous. This question, together with the past history of tuberculosis, has been so recently and so clearly dealt with by Dr. Otto May that I need only again refer to his paper. A past history of empyema, where no obvious limitation of pulmonary capacity is left, need not require any extra; but in the rare condition of double empyema with recovery, each case must necessarily be judged on the resultant condition.

The *alimentary* system is often treated with scant consideration in insurance histories. The modern developments of gastro-intestinal surgery have, however, drawn attention to this system somewhat dramatically. A history of gastric or duodenal ulcer is not very easy to establish, but they suggest caution, particularly in regard to the former, since the risk of malignancy in these cases is now established as a real one. The after results of operation have been before our Society on several occasions. I must confess that I regard such cases, even when apparently completely successful, with some suspicion, since surgical treatment deals with effects rather than causes, and I usually advise some extra rating, depending upon the age, the interval after operation, and the subsequent history. Gall-stone colic, with its attendant risks and sequels, obviously requires some protection to the office, and even when successfully treated by removal of the gall-bladder, a long interval must elapse before the proposer can be regarded as eligible at ordinary rates. A history of appendicitis, especially if of repeated attacks, requires an extra or postponement for operation. Piles and fistula are of increasing importance with advancing years, and should not be ignored. They suggest careful inquiry into habits and the functions of the liver, heart, and lungs.

As a rule, elderly proposers recognise that any serious *nerve disorders*, such as a stroke, uræmic fits, or actual mental alienation, render insurance prohibitive or impossible; but sometimes these problems come before us and we must recognise the probable risks in such cases and protect the office by declining or by the addition of heavy extras. The subject of neurasthenia has been dealt with by Dr. James Collier in his recent paper before our Society in such a masterly way that I can dismiss the subject without other reference.

Genito-urinary conditions are necessarily of great importance. A history of nocturnal frequency of micturition, of hæmaturia, gravel, stone, cystitis, or enlarged prostate should lead to most careful inquiry and examination. In all of these conditions, special reports, X ray examination or tests of urinary functions may be necessary, and it may be impossible to assess the expectation of a proposer without them. The onus of such special examination is nowadays necessarily placed on the proposer. It may well happen in the future that such investigations may be carried out at some central or collectively supported diagnostic institute. Stone and enlarged prostate may both require postponement for operation. Cystitis and gravel may need postponement for treatment, and even after this may require an extra.

A history of *operation* may require special consideration, especially in the case of major operations upon the abdominal organs. Each case must be considered upon its merits and upon the post-operative history; but the risk of recurrence of the condition for which operation was performed and the likelihood of trouble from adhesions should be borne in mind in every case, and the proposer's assertion that he has never had any trouble since should be critically considered.

Long *tropical* residence and a history of past tropical diseases should lead to careful examination for sequelæ and for evidence for cardio-vascular damage, but if such are not present, these lives are not unduly risky, for they have survived the dangerous period of tropical residence. Inquiry into the average daily ration of food, alcohol, and tobacco may be of considerable importance in elderly proposers, especially where there is any hint of high blood pressure or circulatory defect of any kind. Many elderly people tend to increase their consumption of meat when they ought to curtail it. Tolerance for tobacco lessens with advancing years, while its effects on the circulatory system increase.

Whenever it is possible, a report should be obtained from the private medical attendant in regard to elderly proposers. It not infrequently reveals tendencies of vital importance and gives clearer evidence as to the nature of past illnesses than the proposer can or will furnish.

THE EXAMINATION.

The actual examination of elderly lives should be most careful, systematic, and complete. Under no circumstances should it be hurried. Most of these proposers are genuinely anxious to be insured, and if tactfully dealt with, they will submit to what is required. It is fortunately becoming recognised, and it is a tribute to our special branch of medicine, that an insurance medical examination is often of real value to the proposer. It is not too much to say that not a few middle-aged men owe a debt of gratitude to the medical examiner who discovers some early manifestation of disease, disorder, or defect, and thus leads to effective treatment at a stage when these processes can be arrested or favourably influenced.

In the medical examination of elderly proposers there are three matters to which I devote special attention—viz., the general appearance and build of the proposer, his cardio-vascular system, and the examination of the urine. These I will deal with in order.

General Appearance and Build.

The general appearance and build of the proposer are of cardinal importance, and I would urge upon all examiners outside head office the utmost care in regard to these details. The usual answers are often stereotyped or ambiguous. The young man's physiognomy, stance, and expression may afford useful information, but they are for the most part an unwritten page. The elderly man not infrequently bears his history, his defects, and even his tendencies, writ large for those with eyes to see. The florid, the obese, the plethoric, the cyanotic, the dyspnœic proposer, or one looking years older than his age instinctively impresses us unfavourably, while the spare, wiry, active man, though perhaps rather pale and somewhat under weight, appears to us as likely to survive his full expectation. It is remarkable how often these almost sub-conscious judgments are justified by the subsequent examination. At the same time, while they are useful guides, they should never bias us, but simply lead to special care. Height and weight should be most carefully recorded, and, if possible, compared with previous records. A marked loss of weight and the least suspicion of cachexia should excite suspicion of malignant disease, and in such a case postponement must be recommended. The height-weight ratio is of great importance. I think we should all agree that an elderly light-weight is in general a more satisfactory life from an insurance point of view than a heavy weight, but here family tendencies must always be given due weight to. I personally attach importance to the well-known rule that the abdominal girth should be less than the maximum thoracic circumference, and I look with disfavour upon heavy-weights in whom this condition does not obtain.

I attach great importance to the manner of the proposer. Jack London describes a condition of "age lag" in the elderly. This is in some sense a protective reaction. It lessens strain and is an adaptation to the inevitable involution processes of age. In excess it is pathological and betokens

cerebral arterio-sclerosis. Its converse, what I call "age flurry"—evidenced by undue haste, garrulity, and irritability, is significant of high blood pressure and mental strain. It is a danger signal and should not be ignored. Early greying of the hair is not of importance; indeed, Francis Bacon believed that in such people, if the hair remained, longevity was usual.

Cardio-vascular System.

The examination of the cardio-vascular system should be most carefully conducted and most exactly recorded. The characters of the pulse, its response to exertion, the nature of any irregularity, and above all, the state of the arterial wall should be stated. The latter should be judged from the brachial and the temporal arteries, and not from the radial alone. I feel most strongly that a record of blood pressure should be insisted on in every proposer over the age of 50, no matter what the proposal may be, either in amount or in duration of insurance. A medical examiner who will not take the trouble to get a sphygmomanometer and learn how to use it properly, should not be permitted to examine. As well might he examine without a stethoscope. Unfortunately, a supposed rule has gained some currency that the blood pressure in millimetres is roughly the age + 100. It should now be recognised that this is incorrect. Personally, I regard a systolic pressure persistently above 150 mm. as abnormal at any age. We are often told that a single record of blood pressure is of little value, since it may be markedly influenced by nervousness, excitement, or other temporary conditions. This is equally true of a rapid pulse-rate, and demands, like it, either explanation or re-examination. I am coming more and more to attach importance to the diastolic pressure, since it is little, if at all, influenced by the factors which modify the systolic reading, such as stress or emotion. When a uniform method of recording this is agreed upon, I believe it will be of great assistance to us in insurance work. Personally, I regard a diastolic blood pressure of 120 mm. or over as pathological, and in such a case I should either postpone for re-examination, or, if there were evidence of arterial degeneration, cardiac hypertrophy, or albuminuria, I should recommend declining. In regard to the systolic blood pressure, I should postpone a case with a reading of 160 mm. or over for further examination, and decline outright one of 200 or over.

A rapid pulse-rate in an elderly person, or a very slow one, must be closely investigated and correlated with the condition of the heart, since either may be significant of myocardial degeneration. The question of irregularity of the pulse has been recently discussed before this Society. It is of even greater importance in the elderly than in the young because it is more frequently pathological. It must not be too hastily assumed that it is negligible. Even in case of extra-systoles, we must make certain that there is no organic lesion accompanying them. In reports, the position of the cardiac impulse, the size of the cardiac dullness, and the character of the heart-sounds should be most explicitly stated, if there is any abnormality, and the effect of exertion should be noted. In every case the heart should be examined both in the erect and recumbent postures, and any undue alteration in the pulse-rate with change of posture must be noted.

Urinary Examination.

The urinary examination in all cases past middle life should be most careful, the specific gravity, the physical characters, and the presence of albumin, blood, pus, and sugar noted. In every doubtful case the urine should be examined more than once, and samples at different times of the day and under different dietary conditions investigated. A low specific gravity should be proved not to be due to chronic interstitial nephritis. A turbid, ammoniacal, or offensive urine, or one containing pus or excess of mucus, necessitates postponement. The possibilities of stone, enlarged prostate, cystitis, pyelitis, and ascending urinary infections must be borne in mind, and if such cases come up again after postponement, the absence of these conditions should be established, preferably by a report from the proposer's medical attendant.

The presence of albumin in an elderly proposer, even in traces, should always be a danger-signal to the examiner, and lead to careful search for other criteria of renal disease. If any of these are present, or if the albuminuria is persistent, even apart from them, the case should be declined. The utmost care should be taken in testing, several tests being used if there is any doubt, including the salicylsulphonic test. In any doubtful case more than one specimen should be examined, and a microscopical examination of the centrifugalised deposit should be made.

Glycosuria in the elderly presents, if anything, a more difficult problem. It may be admitted that diabetes in the elderly is frequently of alimentary or dietetic origin, and that, given reasonable care in regard to diet and mode of life, the condition is consistent with survival to old age—yet we must also allow that it is a serious metabolic defect, and that it may progress to more serious forms with acidosis. The only types of occasional glycosuria which should even be considered are those in which it can be proved to be due to an excessive consumption of sugar on the particular occasion when the urine was examined, and those in which a low "leak point" can be proved to exist. To establish these conditions proper tests of sugar tolerance are necessary, by means of test diets and blood-sugar estimations, the latter being at present rather expensive investigations, of which the onus of the cost must at present be thrown upon the proposer. I have on several occasions been fortunate enough to get proposers to allow this. The information gained by them is certainly worth the expense it involves. It is needless to add that the presence of acetone bodies in a urine with sugar would probably mean that the proposer was uninsurable.

The examination of the abdomen should never be omitted. It may reveal enlargements of the liver or spleen, or even some tumour in connexion with some abdominal viscus, of which the proposer may be unaware. The examination of the chest should also be careful and detailed. Enlarged veins, asymmetry, emphysema, bronchitis, or evidences of old tuberculous disease may render the case other than first class or even uninsurable. The examination of the nervous system, the investigation of the joints and locomotor system, and the close scrutiny of any hernia, varicose veins, or wound scars must all receive due consideration, and may give valuable information.

THE ASSESSMENT.

In assessing the proposer for any form of assurance, the medical assessor should bear in mind the so-called "expectation of life" at the proposer's age. This is usually obtained from the O.M. table, representing the combined experience of many insurance offices over a period of 30 years in carefully selected lives taking the most favourable policies. It should be emphasised that it does *not* represent the average duration of life of all people at that age, but only of those favourable lives carefully selected. We have to ask ourselves in regard to any given case whether there are present conditions, either hereditary or personal, which will tend to prevent the proposer from living to *at least* the age indicated by the table. I have appended for reference the figures at the decades and half decades from 50 to 75:—

At 50 ..	20·696 years.	At 65 ..	11·630 years.
„ 55 ..	17·419 „	„ 70 ..	9·206 „
„ 60 ..	14·380 „	„ 75 ..	7·125 „

It is in determining a rating for any defect that our difficulties arise. In this connexion we must remember that we deal specially with the individual, the actuary deals with him in relation to the average; we deal with units, he thinks in numbers. We should look at the average through the individual, whereas he looks at the individual through the average.

The usual methods of rating up or dealing with sub-standard lives are not all applicable to elderly

lives. The addition of a certain number of years to the age is obviously the simplest method of rating, but we must in this connexion remember that the effect on the premium of even a small addition increases enormously with advancing years, and that an addition of five years may make it prohibitive, while two or three years' addition may be a very considerable extra. It is therefore wise sometimes to find out what the suggested addition of years involves in extra premium.

An endowment policy at an age some years below the expectation may be a means of dealing with some cases, and where an increasing risk is involved, an extra in addition may be necessary. Endowment policies are naturally, as a rule, less attractive than to a younger person, and may be quite unsuitable for what the proposer requires. The same naturally applies in greater degree to a double endowment and to the imposition of a debt on the policy. Therefore these methods of rating can seldom be recommended. A whole-life policy with payments limited to a given age affords little protection, except in the earlier years, and can seldom be suggested without a rating up in premium in addition. Occasionally short-term policies are asked for on elderly lives, and an optimistic agent may suggest that the risk, where some defect exists, is slight owing to the short duration. The medical examiner must scrutinise such lives with special care, as the risks are great in proportion to the premium.

CONCLUSION.

Gentlemen, I will conclude as I commenced, by confessing that elderly lives still cause me much anxious thought. What I have endeavoured to do is to outline my own difficulties and my own practice. It is hard, and perhaps useless, to suggest general rules, and we must always remember that each case presents an individual problem and that rules are not elastic or comprehensive enough to deal with some of our complex cases. I console myself with one of Bernard Shaw's witty paradoxes—"The golden rule is that there are no golden rules."

OBSERVATIONS ON TEMPERATURE AND OTHER CHANGES IN WOMEN DURING THE MENSTRUAL CYCLE.

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THE possibility of the occurrence of rhythmical variations in the metabolic processes of women corresponding to the menstrual cycle was suggested by Jacobi[1] as early as 1876. In a paper entitled "The Question of Rest for Women during Menstruation," she suggests that

"on the hypothesis that the menstrual period represents the climax in the development of a surplus of nutritive force and material we should expect to find a rhythmic wave of nutrition gradually rising from a minimum point just after menstruation to a maximum just before the next flow .... The traces of this rhythmic wave should be measured by the consumption of oxygen, by the tension of the arterial system, the vital capacity of the lungs, possibly also by the dynamic force of muscles."

Her observations and those of later workers, notably Zuntz[2] (1906) have confirmed this hypothesis with regard to the variations in body temperature occurring during the menstrual cycle, but with regard to variations in cardiac frequency no such confirmation has been found by early workers. King[3] (1914) finds in her subjects rhythmical variations in pulse frequency corresponding to those in body temperature, but these results are contradicted by those of Blunt and Dye[4] recently published. No rhythmical variations have been observed in the case of blood pressure, respiratory exchange (Hollingsworth[5]), efficiency of muscular work, nor in special metabolism—e.g., excretion of creatin.

Realising the scarcity and at the same time the usefulness of reliable records concerning any possible changes which may periodically occur in normal healthy women in relation to menstruation, a specially selected group of women medical students were asked to undertake the keeping of daily records of temperature, pulse, and blood pressure for some months. The subjects—16 in all—who were interested in the problem, and who were very reliable observers, agreed to do this, and the present paper gives some of the

[1] Jacobi: The Question of Rest for Women during Menstruation, London, 1878.
[2] L. Zuntz: Archiv für Gynäk., 1906, vol. xxviii., p. 106.
[3] King: Amer. Jour. Physiology, 1914, vol. xxxiv., p. 203.
[4] Blunt and Dye: Jour. Biol. Chem., 1921, vol. xlvii., p. 69.
[5] Hollingsworth: Functional Periodicity, New York, 1914.

Temperature (Mouth).

Student.	I.—*Morning.* Premenstrual period.	Menstrual period.	Postmenstrual period.	Intermenstrual period.	No. of cycles observed.	II.—*Evening.* Premenstrual period.	Menstrual period.	Postmenstrual period.	Intermenstrual period.	No. of cycles observed.
	° F.	° F.	° F.	° F.		° F.	° F.	° F.	° F.	
1	98·2	97·8	97·7	98·1	5	98·2	97·8	97·7	98·3	5
2	98·4	98·0	97·8	98·2	3	98·6	98·3	98·2	98·7	3
3	98·3	97·9	98·0	97·7	5	98·1	97·7	97·6	97·9	5
4	97·9	98·0	97·8	97·8	4	98·9	98·8	99·0	98·8	4
5	98·7	98·4	98·3	98·4	3	98·8	98·6	98·4	98·3	3
6	98·2	97·9	97·8	97·9	10	98·1	98·0	97·9	97·9	10
7	98·4	97·9	97·9	98·2	7	—	—	—	—	—
8	98·4	98·0	97·9	98·3	11	98·2	97·6	97·7	98·0	11
9	97·7	97·4	97·5	97·5	7	97·7	97·5	97·5	97·5	7
10	98·3	97·6	97·6	97·9	4	98·0	97·2	98·0	97·8	4
11	97·9	97·6	97·9	97·7	3	97·6	97·4	97·7	97·5	3
12	97·4	97·2	97·4	97·5	4	97·4	97·5	97·6	97·7	4
13	97·6	97·4	97·5	97·5	4	98·1	97·7	97·8	97·6	4
14	98·1	97·5	97·5	97·9	5	98·2	97·7	97·7	98·1	5
15	98·4	97·6	97·4	97·8	4	99·1	98·9	98·7	98·9	4
16	98·3	97·8	97·9	98·0	5	97·4	97·8	97·9	98·2	5
	Av. 98·1	97·8	97·8	97·9	To. 84	Av. 98·2	97·9	98·0	98·1	To. 77

Temperature (Rectal).

	III.—*Morning.*					IV.—*Evening.*				
	° F.	° F.	° F.	° F.		° F.	° F.	° F.	° F.	
1	98·7	98·3	98·1	98·6	5	99·2	98·7	98·6	99·2	5
2	98·8	98·4	98·3	98·8	3	99·2	99·1	98·8	99·5	3
3	99·0	98·5	98·5	98·5	5	99·7	99·4	99·3	99·3	5
5	99·3	98·9	98·7	98·9	3	99·4	99·1	98·9	99·2	3
6	99·0	98·5	98·5	98·6	10	99·4	99·0	99·0	98·9	10
7	98·5	98·3	98·1	98·5	7	—	—	—	—	—
8	98·9	98·4	98·3	98·6	11	98·9	98·2	98·1	98·7	11
10	98·6	98·1	98·0	98·3	4	98·8	98·2	98·2	98·7	4
12	97·8	97·7	97·7	97·7	4	98·7	98·7	98·8	98·8	4
13	98·1	98·0	98·0	98·0	4	98·8	98·6	98·7	98·3	4
14	98·4	97·9	97·9	98·6	5	98·8	98·6	98·6	98·9	5
15	98·8	98·2	98·2	98·5	4	99·9	100	99·7	99·9	4
16	98·4	98·0	98·0	98·1	5	98·7	98·1	98·3	98·7	5
	Av. 98·6	98·2	98·2	98·4	To. 69	Av. 99·1	98·8	98·8	99·0	To. 64

Pulse-rate.

	V.—*Morning.*					VI.—*Evening.*				
1	59	58	58	60	5	63	59	59	65	5
2	69	66	63	70	3	72	68	64	74	3
3	69	66	68	70	5	67	62	64	67	5
5	65	65	63	65	3	65	62	64	67	3
6	69	65	65	67	10	69	64	65	66	10
7	80	77	78	79	7	—	—	—	—	—
8	68	66	68	68	11	67	64	66	67	11
9	66	61	62	68	7	69	61	67	67	7
10	71	66	68	68	4	68	64	65	66	4
12	59	57	58	61	4	69	65	68	72	4
13	62	58	59	59	4	65	60	63	63	4
14	64	63	65	64	5	61	59	61	60	5
15	63	60	64	63	4	76	74	78	77	4
16	69	67	69	70	5	72	67	70	71	5
	Av. 67	64	65	67	To. 77	Av. 67	64	65	67	To. 70

Av. = average over whole period of observation. To. = total.

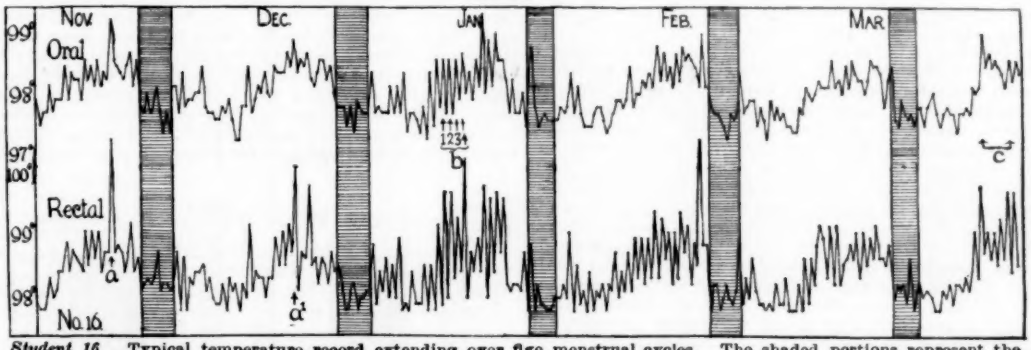
TABLE VII.—*Blood Pressure, Morning 10 a.m.*

Student.	Pre-menstrual period.	Menstrual period.	Post-menstrual period.	Inter-menstrual period.	No. of cycles observed.
	mm. Hg.	mm. Hg.	mm. Hg.	mm. Hg.	
1	93	91	96	96	4
10	94	99	102	98	1
11	108	109	113	110	1
13	100	95	99	101	2
14	103	102	103	102	5
2	109	106	106	115	3
5	120	113	116	113	3
15	117	119	116	114	4
7	113	112	114	109	1
8	116	112	118	118	5
16	129	126	134	128	1
	Av. 109	107	110	109	To. 30

and in that short period show no constancy. Charts 2 (a) and 2 (b) give the morning and evening temperatures charted separately, (a) oral, (b) rectal; Chart 3 the average values for corresponding phases of each menstrual cycle in this particular case. The sufficiently close agreement between the figures for each cycle is evidence as to the accuracy of the records.

Tables I.–VII. show average values calculated from corresponding phases of each menstrual cycle in this and fourteen similar charts. The value for the menstrual period is in all cases the average value for the days during which menstruation actually occurred, varying from four days in most cases to six or seven in some. The pre-menstrual value is the mean of the values for the seven days preceding its onset and the post-menstrual that for the seven days subsequent to its cessation. The inter-menstrual value is the mean for the period between the end of the post- and the beginning of the pre-menstrual phase—a period varying from 7 to 14 days. It was found most satisfactory to consider the morning and evening values separately. All the subjects were in normal health except No. 4 who was suffering from amenorrhœa,—the whole chart extending over four months showed only one period of menstruation—and No. 12 who has an abnormally long intermenstrual period in the last

CHART 1.



Student 16. Typical temperature record extending over five menstrual cycles. The shaded portions represent the menstrual periods. a, After hot bath. a¹, 1½ hours after hot bath. b, After (1) 3 hours', (2) 3 hours', (3) 6 hours' exercise; (4) ½ hour after exercise. c, Student took Second M.B. examination.

CHART 2 (a).

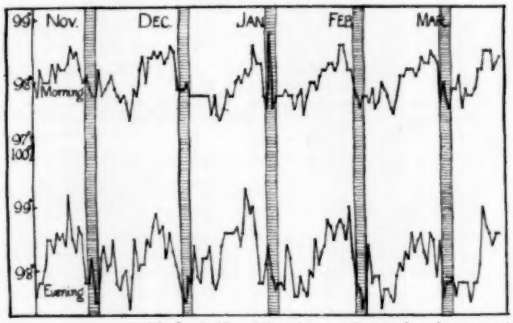
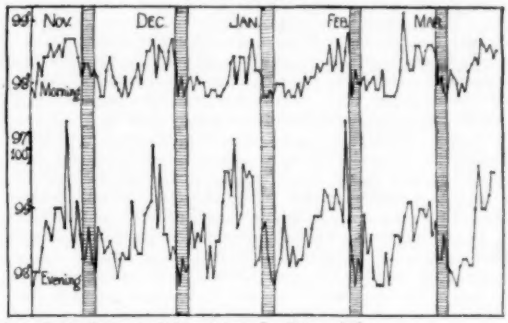


CHART 2 (b).

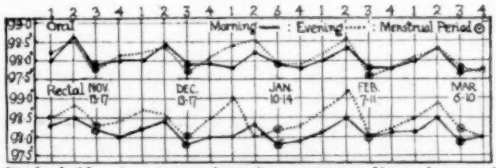


Student 16. Morning and evening temperatures charted separately: (a) oral; (b) rectal.

results obtained from records taken over periods ranging from 3–11 months. The temperature records were taken orally and rectally before getting up in the morning, and before going to bed at night; this was the same for pulse-rate observations. The blood-pressure records were made about 10 A.M., after arrival at the laboratory. The results are somewhat obscured in some instances by the fact that the values recorded are not always minimum values, some being taken after exercise or after a hot bath, &c. But in spite of these irregularities, it is quite clear that temperature, at any rate, shows a definite rhythm in a number of individuals.

Chart 1 is a typical record extending over five complete cycles and is chosen because it shows very clearly the rhythmical variation in temperature. This record also shows variations in pulse frequency with a tendency to slowing with the depressed temperatures, but the rhythmical variation is not so apparent. The blood-pressure records were only taken over six weeks

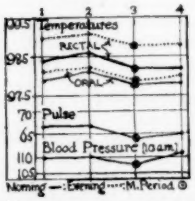
CHART 3.



Student 16. Average values for corresponding phases of each menstrual cycle.

cycle recorded. Any individual readings which were obviously taken under abnormal conditions have been omitted in calculating the mean values. Chart 4 is plotted from the mean values for each phase calculated from the mean values of all the subjects observed.

CHART 4.



Showing mean values for each phase, calculated from the mean values of all the subjects observed.

A study of the tables and charts shows the nature of the variations. The *temperature variations* are similar to those recorded in the observations of Zuntz and more recent workers. The maximum value is recorded in most cases in the pre-menstrual phase (there are a few exceptions, notably Nos. 4 and 12), the inter-menstrual value is sometimes equal to the pre-menstrual but seldom higher and the menstrual value is the minimum, there being therefore a rapid fall from the pre-menstrual to the menstrual. The post-menstrual value is occasionally the same as the menstrual but in the majority of the cases (90 per cent.) shows a slight rise which is then continued steadily through the inter-menstrual phase until the maximum is again reached in the pre-menstrual phase. This pre-menstrual rise in temperature is specially noted in some records taken by the late Dr. Constance Colley during a year's residence as a patient in a sanatorium and discussed in a short but interesting article in the Students' Magazine of the London (Royal Free Hospital) School of Medicine for Women, 1909—as far as can be ascertained the only record of the work. It may be pointed out that sanatoria would seem to offer a useful field for the obtaining of these and similar data, since the patients often remain in them for long periods and live under conditions of great regularity as regards external conditions.

It will be noticed that the changes for each corresponding set of figures are very small, generally only about 0·3 of a degree (F.). In contradistinction to this is the wide range of variation from day to day, fluctuations in temperature evidently occur very easily and the regulation of temperature is less exact than one is apt to assume. The figures for the mean *pulse-frequency* in each period also show rhythmic variations. The post-menstrual rise in this case, however, appears to be more rapid, the value for the inter-menstrual period being nearly always as high and sometimes higher than that for the pre-menstrual phase. Out of a total of 27 records the inter- and pre-menstrual records are equal in six cases, the former is the higher in 11 cases and the latter in 10. The menstrual and post-menstrual figures are always lower than the rest of the cycle, the menstrual value being the minimum in all but three cases. The range of variation is small, being on an average four beats per minute, and in every case under ten. In the blood-pressure values no definite variations can be seen. In 8 out of 11 cases there is a fall from the pre-menstrual to the menstrual values, but the observations are not sufficiently extended to justify any definite conclusions.

It is regretted that the publication of these results has been so long delayed (the observations were made in 1916), but the detailed consideration of such a large number of figures requires more time than has been at the disposal of the instigator of these observations, who wishes to record her indebtedness to Mrs. Oppenheimer for her help in their collection and to Miss Ross-Johnson for the skilful and painstaking manner in which she has been through the records, correlated them, and investigated them in detail. Grateful thanks are also given to those students who carried on this long and at times necessarily irksome series of observations.

It is very desirable that such records should be added to and further extended so that there should be information as to the changes that might naturally be looked for in connexion with such normal physiological processes in women as puberty, pregnancy, and the menopause.

A NOTE ON
VARIATIONS OF BLOOD PRESSURE DURING MENSTRUATION.

BY SAMUEL E. AMOS, M.R.C.S. ENG., L.R.C.P. LOND.,
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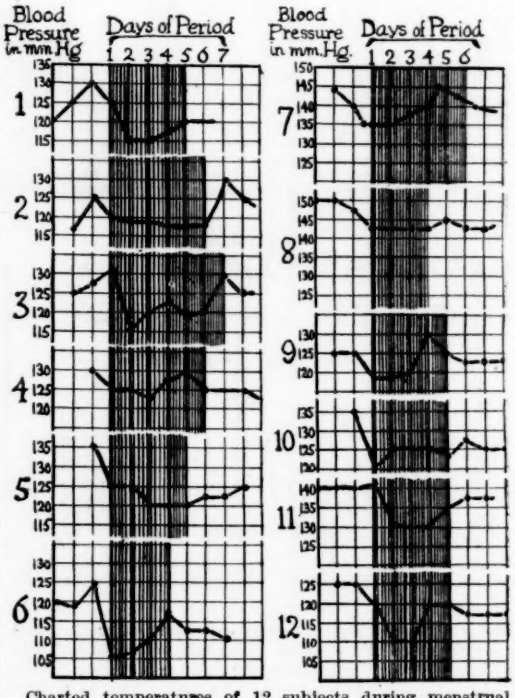
OBSERVATIONS, if any have been made, on the fluctuations of blood pressure during menstruation do not appear to be mentioned in any of the current text-books. It would be interesting to know, if there are any results of such observations available, whether they show the same tendency in variation as those which I have obtained. Below will be found records which I made in 1921 when assistant medical officer at Brompton Hospital Sanatorium, Frimley.

Twelve of those patients who were most fit and performing light gardening work were selected, and their blood pressures were taken at noon each day, just before the rest hour. The patients were doing the same amount of work day by day and their diet was of the same kind. The readings I made were systolic and observed on a falling pressure, after obliteration of the pulse, by auscultation, with a tactile check on the radial pulse, and the ordinary type of mercurial sphygmomanometer was employed.



Charted temperatures of 12 subjects during menstrual periods. The shaded portion indicates menstrual periods.

It is quite probable that the absolute blood pressure of these patients would be pathological, owing to the fact that they were suffering from chronic pulmonary tuberculosis, but, even so, the *relative* pressure should be, for all intents and purposes, normal. The results are shown in the accompanying charts.

It will be seen that early in the menstrual period there is a decided fall of pressure, and this is often preceded, a day or so before the commencement of the period, by a rise, and further, after the rather sudden fall, there is again a rise towards the end of menstruation, or a day or so after the period has finished.

A NOTE ON THE "AMMONIA COEFFICIENT" IN MENSTRUATION.

BY MURIEL BOND, B.Sc.

(From the Physiology Department, London (Royal Free Hospital) School of Medicine for Women.)

FROM some observations made upon the composition of the urine of a normal subject, it would appear that there is a certain relation between the value of the "ammonia coefficient" and menstruation.

In the post and inter-menstrual periods the coefficient varies little from the inter-menstrual average, but during the seven days previous to the period — i.e., the pre-menstrual period — there is a marked rise. This rise appears to be due to a rise in (total) output of urinary ammonia rather than to a decrease in (total) output of urinary nitrogen (Charts I. and II.).

In this subject the usual pre-menstrual rise in body temperature was shown. (Chart II.)

CHART I.

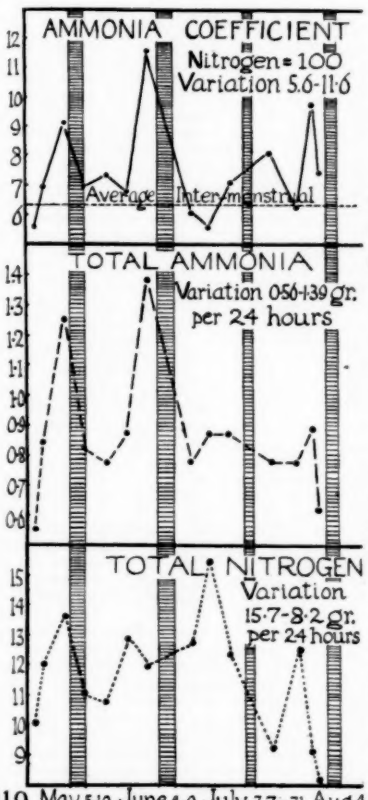
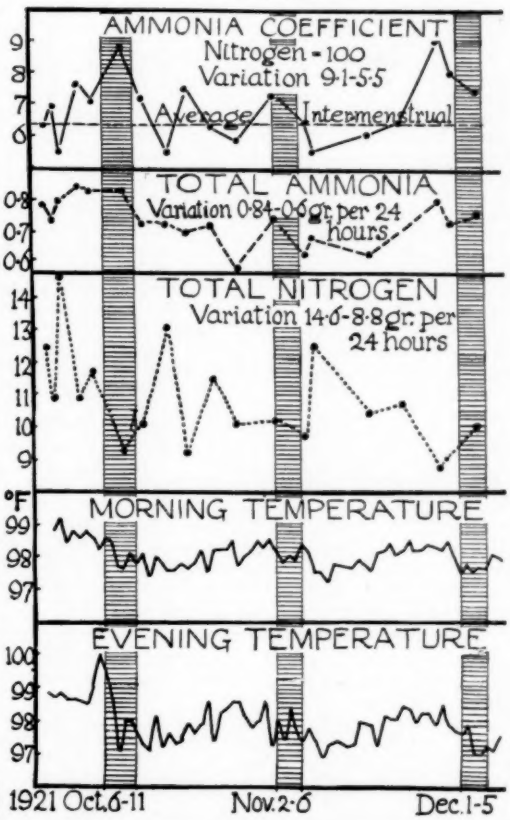


CHART II.



COLLOIDAL CALCIUM IN MALNUTRITION, CHRONIC SEPSIS, AND EMOTIONAL DISTURBANCE.

BY T. C. GRAVES, B.Sc., M.D. LOND., F.R.C.S. ENG.,
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IN previous papers[1] [2] I communicated the general results observed following the oral administration of calcium lactate in the treatment of excited and agitated mental states, and in 1920 I inquired of the Crookes Laboratories as to the possibility of the manufacture by them of a colloidal calcium preparation, in the hope that such a form would avoid both the production of the painful localities stated to follow the injection of the water-soluble salts due to protein precipitation,[3] and the probable difficulty of insufficient absorption from the alimentary canal of the water-soluble calcium salts, which might explain the variation in results obtained in different cases. E. C. Dodds has recently suggested that defective absorption of lime salts, due to pancreatic disorder, may be a factor in the causation of rickets.[4]

On observing from the report of E. E. Prest[5] that a colloidal preparation of calcium was then available and had been used by him with beneficial results in the treatment of tuberculosis, I commenced treating cases of mental disorder, some complicated by tuberculosis, with the colloidal preparation of calcium oleate. Later, at my suggestion, Mr. J. F. Ward, B.Sc., chief chemist of the Crookes Laboratories, kindly prepared a colloidal form of calcium and lecithin; my object was to administer subcutaneously—thus avoiding the destructive digestive processes in the alimentary canal—a colloidal preparation which contained not only calcium, but a phosphorised lipoid, in the hope that such a combination would be useful to meet the needs of nervous and other tissues exhausted by the stresses of bodily disease and mental disorder. Mr. Ward has kindly informed me that there is reason to believe the calcium lecithin is a definite chemical compound and not a mechanical mixture. It would also appear that lecithin is more easily prepared in a colloidal form in this manner than as lecithin alone.

Both preparations have been used, but it is too early to determine with any degree of certainty that the lecithin combination is to be preferred to the oleate. The toxicity of the lecithin preparation has been tested on rabbits. Seven and eleven cubic centimetres, injected intravenously, produced no noticeable effect. The salts of calcium have been advised for many diseased conditions, and a critical attitude is therefore necessary. Some observers have obtained clinical results which others have failed to confirm, yet recent experimental work continues to emphasise the importance of the function of calcium in the chemistry of nutrition and growth.[6] Zilva, summarising the work of McCollum, Simmonds, Shipley, and Park[7] writes: "It is only necessary to assume that the greater the deficiency of calcium the more

urgent the demand for fat-soluble vitamin, a not improbable hypothesis."[8] For conditions of nutritional loss due to over-activity of the kinetic drive one regards the treatment by calcium as a metabolic one—it assists anabolism and possibly hinders excessive katabolism—and not in any way as in the nature of a drug medication.

Scope of the Treatment.

The treatment is not advocated as a panacea for all mental disorders; the following cases, some of which must be regarded as irrecoverable owing to long-standing disease, are submitted, not as triumphant cures, but in order to indicate the improvement which has followed a line of treatment, the further development of which may yield more fruitful results in these and other diseased states—if applied early enough. In each a definite alteration in the mental state has been observed associated with some bodily improvement. As to the permanency of improvement, time alone can testify. In some cases the treatment may be required merely to assist in building up a reserve which has fallen from various causes below normal—or perhaps never was normal, as in old rachitic cases; in others, the treatment may be a permanent necessity, thus leading to a consideration of the simplest dietetic measures capable of giving similar ameliorative results.

In connexion with this latter group the absorbability question arises. In some cases, although they have been treated with the water-soluble salt, improvement apparently does not ensue until the calcium preparation has been injected into the tissues. If calcium is absorbed as a soap, disturbance of the pancreatic secretion may account for diminished absorption from the alimentary canal, provided the food contains lime in a form suitable to convert into a soap.

Cases Showing Response to Treatment.

The following cases are submitted as examples of the response to the treatment. Other cases are also under treatment.

CASE 1.—Female, aged 33, Standard VI. on leaving school. Father and two paternal uncles and an aunt died of pulmonary tuberculosis. Patient has always been nervous, excitable, easily frightened, and quick-tempered; for last three years complained of a subjective sensation in the head, worse premenstrual, became depressed after death of father, head sensation intensified, had to leave work a year before admission, and three months before admission went off food, lost weight (had been 8 st.), wandered from home muttered to herself, always talking about her brains.

Condition on admission: Weight 5 st. 11 lb., facial pallor, poor peripheral circulation, skeletal development, nutrition and muscularity; heart limits and sounds normal, pulse 112, regular, wave weak. Wassermann reaction negative. Lungs normal. Anxious, agitated, depressed, impulsive, restless, resistive, disorientated. After long latent period replies, "I don't know," to simple questions; cannot name days of week or any simple article when shown her. Later became destructive, wet, and dirty, but took food well. Temperature subnormal.

Treatment: Cod-liver oil and calcium lactate produced no improvement, and later injections of colloidal calcium oleate were given 0·5 c.cm. daily, then 0·5 c.cm. twice daily for a week, then 1 c.cm. twice daily—later, when improvement was noted, reduced to 1 c.cm. daily. Cod-liver oil continued. During the second week the subnormal temperature began to oscillate above the line and she became less resistive and excitable, and during the third week became cleaner in habits and more quiescent. Soon pus was noted to be oozing from around some buried stumps.

The variation in weight and other matters were as follows: Height, 4 ft. 10 in. Weight on admission from home, June 6th, 1922, 5 st. 11 lb.; on the 28th, 5 st. 11 lb. Became more restless and agitated. Put on cod-liver oil, July 4th; on the 12th, put on calcii lactas. Restlessness not improved; she began to be wet and dirty on the 14th. Weight on the 16th, 5 st. 8¼ lb. Colloidal calcium ½ c.cm. daily on the 16th, 1 c.cm. twice daily on the 30th. Weight then 5 st. 10¾ lb. Ceased to be wet and dirty on August 9th. Weight on the 14th, 6 st. 5¼ lb. Wrote a sensible letter to her mother on the 24th. 1 c.cm. daily on the 24th. Helps in ward, Sept. 9th. Weight then 7 st. 6½ lb. Old stumps extracted (patient insisting on no gas) on the 15th. Weight on the 24th, 7 st. 2½ lb.; on Oct. 1st, 7 st. 5 lb.

CASE 2.—Female, first attack. History: One brother, three sisters, alive and well. At school, patient only reached third standard, always being ill. At age of 7 had pneumonia and pleurisy for several months. At age of 12 phthisis became definite, involving right upper lobe and to a less extent the left. Temperature close on 100° F., rapid pulse; treated with tuberculin injections, the acute phenomena subsided and condition became chronic; since then patient has constantly had cough and sputum. Domiciliary treatment with cod-liver oil and emulsion brought up large quantities of sputum; patient ate little and lost weight. Menstruation regular up to November, 1921; often when unwell her sputum was streaked with blood. In December menstruation slight and thereafter ceased. Sudden onset of mental disturbance occurred beginning of November, 1921. She became "silly," heard and answered "voices"; slept poorly, continually talking all night, cried without apparent cause, saw doctors and nurses on curtains, threatened to commit suicide, memory poor, impulsive if thwarted, kicked and struck relatives, used obscene language, conversation irrational though when awake never ceased talking. Appetite later became capricious, at times refused food, at other times ravenous.

Condition on admission: Admitted April 13th, 1922, aged 22. Physical condition: Emaciated, bruises and abrasions, temperature 97°, pulse 78, respiration 26. Narrow high palate. Thyroid enlarged, complexion sallow. Cardiac limits normal. Peripheral circulation very poor, all toes of both feet very cyanosed. Lungs (difficult to examine) some hollowing above clavicles, no dullness, air entry fair, but breath sounds not heard so well at back of right apex as at the left. No adventitious sounds. Cough present. Much purulent sputum, in which after diligent search three tubercle bacilli were found. Abdomen slightly distended, tympanitic, no dullness, no mass. Feeble gait. Urine, nothing abnormal.

Mental condition: Changeable facial expression, at times worried and depressed, at other times apathetic. Attention very poor. No reply to questions. Occasionally spontaneously uses obscene language. Very self-absorbed, spends much of her time answering voices, generally in whispers. Cries for no apparent reason. Disorientated, negativistic, impulsive, violent when washed—kicked the nurse several times and slapped her face. Judgment and insight lost.

Course of case: Followed much same as described. A note on May 15th states that she "lies in bed most of day taking no interest in her surroundings, is at times noisy, resistive, and difficult to nurse, rarely replies to questions, continues to hear 'voices.' Subnormal temperature. Purulent sputum about 2½ oz. daily."

Treatment: Cod-liver oil and malt since two days after admission. May 19th, calcium lecithin subcutaneously; 1 c.cm. every third day until 28th, subsequently increased to 1½ c.cm. daily, later changed to one dose weekly. On August 9th 1 c.cm. twice daily. Up and dressed every day since treatment commenced.

Further course: Nutritional gain in this case has been interesting considering the long history and condition on admission. Relatives state they coaxed her with all varieties and amounts of food when at home, but she never was so well nourished as now.

The variations in weight, &c., were as follows: On admission, April 13th, height 5 feet, weight 5 st. 10½ lb. May 19th, calcium lecithin injections commenced; on the 27th, 6 st. 8½ lb. June 3rd, 7 st. 1 lb.; 18th, 7 st. 6½ lb.; 26th and 27th, menstruation (first since Christmas). Weight on 27th, 7 st. 11 lb.; July 11th, 8 st. 3 lb. On the 23rd and 24th, menstruation; 25th, weight 8 st. 6 lb.; August 8th, 8 st. 8 lb. On the 9th, 1 c.cm. calcium oleate twice daily. On the 15th and 16th, menstruation. On the 18th, three septic teeth extracted under gas. On the 22nd, weight 8 st. 9½ lb.; 31st, 8 st. 8 lb.; Sept. 5th, 8 st. 8½ lb.; 7th–9th, menstruation; 19th, weight 8 st. 8½ lb.; 24th, 8 st. 10 lb. Oct. 1st, 8 st. 9 lb.

Sputum diminished in amount almost immediately after commencement of injections, is often absent and when present rarely exceeds ½ oz.; never any blood-streaked sputum. The skin, formerly dry, became greasy. Peripheral circulation improved, cyanosis of toes passed from blue to purple, then more reddish. During the early part of these stages some œdema over the instep was noted, which later subsided.

Comment.—A case of chronic pulmonary tuberculosis in which the element of sepsis appeared to be predominant. The diminution in the amount and alteration in character of sputum, the improved hedonic tone and gain in weight appear to date from the commencement of injections of the colloidal calcium preparations. It is not suggested that the cod-liver oil had no part in these alterations, but the calcium apparently played an important rôle. That such a case of long-continued ill-health, from child-

hood, should show such nutritional gain is somewhat remarkable.

CASE 3.—Female, aged 40. A case of violent and destructive confusion, habits wet and dirty. Apyrexial as far as could be ascertained. Required tube feeding. Lost weight. Following injections the patient developed two cuticular whitlows of the fingers, these healed soon. She became quiescent, lucid, manageable, and took food well. Later a boil developed on the buttock and the temperature rose. The gums were noted to be oozing pus. The weights, &c., were as follows: On admission, August 31st, 1922, 9 st. 13 lb. On Sept. 11th, 8 st. 9½ lb.; 1 c.cm. twice daily. On the 17th, injections ceased. On the 22nd, 9 st. 4 lb.; 30th, 9 st. 4 lb.

CASE 4.—Female, aged 37. Epileptic. Admitted in a state of epileptic confusion, poorly nourished, and generally debilitated. On emerging from the epileptic confusion she developed a boil in flexure of right elbow, which appeared as though it would make slow healing progress. Three injections of colloidal calcium caused rapid healing. Gums noted to be oozing pus.

CASE 5.—Female, aged 44. Well-defined case of agitation, confusion, hallucinosis and negativism. Weight on admission, Oct. 29th, 1921, 6 st. 9 lb.; November, 7 st. 8 lb.; December, 6 st. 3 lb.; on the 27th put on cod-liver oil. January, 1922, weight 5 st. 13 lb.; February, 5 st. 12 lb.; March, 5 st. 6½ lb.; on the 22nd, 0·5 c.cm. colloidal oleate every five days. April, weight 7 st. 13 lb.; May, 8 st. 3 lb.; June, 8 st. 7 lb.; July, 8 st. 12 lb.; injections ceased. Sept. 26th, weight 8 st. 7 lb.

The gain in weight following the injection of the calcium oleate was paralleled by a diminution in the intensity of the emotional symptoms; patient fed herself and appetite was good. Shortly after the commencement of the injections she developed a large boil on the cheek and another on a buttock. These rapidly healed and were not connected with the sites of injection.

CASE 6.—Male, aged 32. Gonorrhœa in France, 1919, kept condition secret, treated himself and at home for gleet. Nocturnal emissions, urethral irritation, persistence of gleet, shame and financial fear-processes caused worry. Took up spiritualism, soon convinced he was a "medium," began to hear "voices," considered he was capable of being controlled, his dead father "charged him with electricity," told him not to eat, to get dismissal from his firm, to go to a lunatic asylum, &c. He lost weight, appetite, sleep, became pale, ill-nourished, fearful, timid, and hallucinated. On admission gleet treated locally with partial results, at times disappearing and then recurring.

Injections of colloidal calcium subcutaneously resulted in complete disappearance of gleet, nocturnal emissions, and urethral irritation. Patient soon became more cheerful, slept well every night, skin became greasy. Has been out on parole and is recommended for discharge.

Weight on admission, May 30th, 1922, 8 st.; June 28th, 8 st. 1 lb.; July 27th, 8 st. 5 lb.; injection of colloidal calcium. August 6th, weighed 8 st. 11 lb.; 20th, 9 st. 1 lb.; Sept. 3rd, 9 st. 3 lb.; 18th, 9 st. 3 lb. Diet the same throughout. No cod-liver oil.

CASE 7.—Male, aged 33. Imbecile with epilepsy. Treated in colony, but certified owing to unmanageable conduct consequent on persecutory ideation and post-epileptic confusion. Seizures had been 16 a month. Old rachitic development. Soon after admission and following influenza pulmonary tuberculosis diagnosed. Seizures ceased coincident with septic state. Rapidly lost weight, much sputum, numerous bacilli. On cod-liver oil and extra diet nevertheless became emaciated and peripheral circulation cyanosed. Skin dry. Radiogram shows fibrosis over whole left lung, obliterating cardiac outline, and upper lobe right lung.

Height, 5 ft. ¼ in.; weight on admission, August, 1921, 7 st. 13 lb.; September, 7 st. 12 lb.; October, 8 st.; December, 6 st. 10 lb.; January, 1922, 6 st. 7 lb.; February, 6 st. 6 lb. Injections colloidal calcium oleate Feb. 7th at varying intervals. March, weight 7 st. 6 lb.; April, 8 st. 4 lb.; May, 8 st. 12 lb.; on the 30th, injections ceased. June, weight 8 st. 9½ lb.; July, 8 st. 13 lb.; August, 8 st. 13 lb. From the 9th to the 23rd, twice daily 1 c.cm. injections. Sept. 2nd, 9 st.; 17th, 8 st. 12 lb.

Sputum diminished in amount, some days absent, rarely exceeds 1 oz. per day; skin greasy, appetite good, sleeps well. During the treatment the epileptic fits were only occasional. Is cheerful and manageable.

Summarised Observations.

Chronic Sepsis.—It would appear that calcium plays a part in the re-excitation of the activities of the mobile defences of the body in conditions of chronic sepsis, and, after the removal of the cause of the chronic sepsis by the induced reaction, calcium "dries up the exudates." In this direction one might describe the action of calcium as being an indicator of or pointer to the existence of a possibly unsuspected chronic sepsis which is inducing little or no active phagocytic reaction. Hamburger found that calcium increases the amœboid movement of phagocytic leucocytes, while barium, strontium, and magnesium had no such effect.[9] Many observers have noted the effect of calcium in reducing or inhibiting exudate formation, probably by increasing the consistency of the colloidal systems of the cell membranes which foreign protein reduces. Grove and Vines[10] working with parathyroid extract observed a rise in the calcium index to be associated with an improvement in chronic septic conditions. They draw the conclusion that "the ionic calcium of the blood becomes deficient in cases where a chronic toxæmia is present. Such a deficiency may be regarded as one of the manifestations of the presence of a chronic toxic state, and is an indication that the septic focus should be carefully sought for and treated where possible." In the preceding cases this chronic sepsis was variously located, oral, pulmonary, urethral, &c. The relation of chronic sepsis to nervous exhaustion has been recently discussed.[11] The production of phagocytic reactions, as a mode of treatment in disturbed mental states, has been noted to follow injections of colloidal calcium, the results being comparable to the nucleinic acid reactions.[12]

Circulatory.—Improved peripheral circulation is a characteristic response to treatment by calcium, and is shown in the colour of the face, lips, gums, &c. This improvement may similarly obtain in the alimentary tract leading to improved digestive processes—certainly the gain in appetite suggests this to be the case.

Skin.—Increased activity of the sebaceous glands—due to improved peripheral circulation—is a usual calcium response. The diminution of night sweats is a result associated with a lessening of chronic septic absorption. This response has been fully described by E. E. Prest.[5]

Emotional Tone.—Broderick[13] quotes Prof. Meyer as having shown that the withdrawal of calcium from the body leads to an increased irritability of the sympathetic nervous system, glands controlled thereby secrete more freely and serous exudations into the tissues are more likely to occur, the administration of calcium does away with this hyper-irritability. Swale Vincent[14] states that "in many respects there appears to be a true antagonistic action between adrenin and calcium chloride." It would appear from the preceding cases that the treatment has improved the hedonic tone and diminished the activity of the destructive emotional (fear) processes.

Nutrition.—Nutritional gain is a feature of these cases. The diminution of the drain on nutrition by chronic sepsis and the improved peripheral circulation assist an ascendancy of anabolic processes probably associated with a diminution of the katabolic proceeding from the hyperactivity of the sympathetic system—a reduction of the activity of the chronic kinetic drive.[15]

I have to thank my several colleagues for their observations on the cases and for carrying out the treatment.

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BLOOD IMMUNISATION METHOD FOR TUBERCULOSIS:

A SUGGESTION FOR A COMBINED THERAPY.

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As one who during the recent war was in command of a military hospital specially devoted to the treatment of tuberculosis, I had exceptional opportunities of observing the effects of treatment by tuberculin. Although in some instances good results were obtained I was convinced that the method does not conform to the requirements of an ideal treatment, which are: (*a*) That it should be applicable to all cases without selection; (*b*) that it should demand no special knowledge in administration beyond that of any qualified medical man. These essentials, it seemed to me, were more likely to be attained by a serum than by tuberculin. I therefore endeavoured to produce such a substance, taking advantage of every conceivable means of fortification.

With this object in view I proceeded on the following lines:—

1. The blood of an animal naturally resistant to tuberculosis was selected, an ass being chosen for the purpose.

2. Immunisation of the animal was carried out by the living tubercle bacilli and not by tuberculin or other toxic derivatives.

3. As pregnancy is a condition where the resistant power of the tissues appears to be increased against tuberculous disease, it seemed advisable to obtain the serum from a pregnant animal.

4. As it is not definitely known whether the protective or bacteriolytic elements in an immunised animal are confined to the serum, and as the red blood corpuscles may possibly contain these or possess other as yet unknown protective qualities, the whole blood of the immunised animal was used.

5. As tuberculosis in man is usually complicated by secondary infection, it appeared reasonable to immunise the animal not only against the bacillus of Koch, but also against concomitant organisms.

As regards (2), it should be noted that E. Maragliano, S. Mircole, A. Marmorek, and others who employed the serum of immunised animals made use of tuberculin as their immunising substance, and their failures may have been due to the fact that they did not employ the living bacillus; this may likewise account for the failure of Macfarland, who is reported to have "injected an ass with tuberculin and tried the serum obtained from it in 15 cases of tuberculosis with no definite result." As regards (3), the fact that pregnancy is a condition in which the resistive power of the tissues to tuberculous infection would seem to be augmented has long been taught and very generally recognised. At the moment of writing an interesting paper has appeared in which the subject of Pregnancy and Tuberculosis is discussed by two French authors, MM. F. Dumarest and P. d'H. Brette. In the course of this article they state that they recently observed seven tuberculous women who reached the full term of pregnancy with no aggravation of their pulmonary condition. In the majority of the cases the tuberculous evolution appeared to be suspended, in a few gestation caused a distinct improvement. One of the patients has had three successive pregnancies in two of which there was general and local improvement. In view of these facts the authors set out to seek the mechanism of this improvement and are of the opinion that it is connected with the temporary suppression of menstruation, of which the reactional phenomena, so frequent among tuberculous women, are known, and which range from simple rise of temperature to hæmoptysis, and to "evolutionary force." In a discussion on their paper Bernard disagrees and, inter alia, remarks: "The apparent resistance of the patient is only temporary, and disappears after the birth of the child." This paper is interesting and encouraging as affording confirmation of the view generally held, but, on the other hand, it would appear to suggest that no true immunity is established during pregnancy and that the improvement so often noted is to be attributed to the lessened drain on the vital forces owing to the cessation of the menses, and possibly also to the increased blood-supply to the tissues. However, the question cannot be regarded as definitely settled, and it is possible that the pregnant state does induce a formation of antibodies.

The choice of a serum would appear to me to hold out much brighter hope of success than the use of tuberculin. In that excellent volume "Serums, Vaccines, and Toxins," Bosanquet and Eyre give a brief account of several serums prepared on the principle of antitoxin serum for use in diphtheria. Maragliano's serum is instanced "with a noteworthy result," and statistics of a favourable nature by Mircoli in reference to this product are quoted. Other writers, however, fail to record improvement as a result of the use of this serum. Marmorek's serum "in one instance appeared harmful, a rapid fall in opsonic index being recorded. This would seem to suggest that the serum contained some toxic body allied to tuberculin rather than an antitoxin." No other harmful effect, however, from the use of serum is recorded. This presents a marked contrast to the reports on tuberculin. Hitherto the criticisms directed against the use of sera have not been because of their harmful nature but merely on account of their inefficiency. Hence, it seemed to me that by employing the red cells in addition efficiency might be obtained. That immunising properties are vested in the red blood corpuscles is a view that does not seem to be generally accepted. C. Spengler has devised an immunising preparation to which he gives the name "I.K." (Immun Körper). It is prepared from the red blood corpuscles of immunised animals, in which he believes the protective substances to be formed, and is administered hypodermically or by rubbing into the skin. It produces, according to him, improvement in breathing and in subjective symptoms, and disappearance of bacilli from the sputum. It can also be used for diagnostic purposes as it produces a local reaction around tuberculous lesions. The majority of writers regard it as useless, but it is recommended by J. Porter, Hollos, and W. E. M. Armstrong. It seems to me impossible wholly to disregard the work of Spengler and his followers. It may be true that no actual immunising properties have been demonstrated in the corpuscles, but it is also evident that the product made from these contains active substances capable of producing reaction. Hence it appeared to me justifiable to carry out tests in which both the serum and red cells of an immunised animal were employed.

As regards (5), I added to the emulsion of human tubercle bacillus which was employed for the immunisation of the animal in man, the sputum from a case of pulmonary tuberculosis containing both tubercle bacilli and other secondary invading organisms.

The Production of the Curative Agent.

On July 1st, 1920, the mammary gland and groin of a donkey mare about three months pregnant was injected with a mixture of 10 c.cm. sputum from a tuberculous patient and half a plate culture (unmeasured) of tubercle bacillus (human), shaken up with distilled water. The culture was obtained from the South African Institute for Medical Research, Johannesburg. No immediate effect was produced on the animal as a result of the injection, but after the tenth day abscesses began to form. The animal lost condition, fed badly and lay down for the greater part of the day. The temperature chart recorded no great rise in temperature, the latter being highest on the night of injection, 101·4°, and 99° F. the following morning, and this variation continued more or less the same for the first two months. At the end of this period of time improvement was noted in the general condition and on August 31st the animal was sent to a

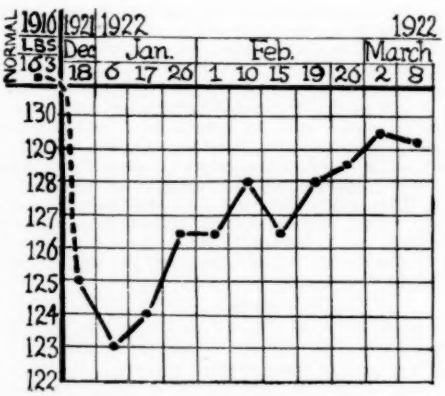
farm where it made a gradual and good recovery. The pregnancy terminated normally in January, 1921. On August 12th, 1921, the donkey mare was brought into town from the farm. The temperature curve was still irregular but with no great range—i.e., from about 101° in the evening to 97° in the morning. On the 18th she was taken to the experimental farm, Potchefstroom, for the tuberculin test and on the next day the following report was received: "Donkey mare tested with 8 c.cm. tuberculin; reaction negative." (Signed) A. S. Canham, M.R.C.V.S.

From Sept. to Dec. 21st four injections of from 2-3 c.cm. of an emulsion of live human tubercle bacilli were injected into the neck, and on Nov. 3rd 10 c.cm. of sputum, reported T.B. positive and containing pyogenic organisms, was likewise injected into the neck, abscesses resulting in each case. The animal at this time was again pregnant. Three tuberculous patients were then injected with the whole blood of the donkey in a proportion of 10 c.cm. of blood to 1 c.cm. of a 1·5 per cent. sodium citrate solution. In bleeding, the blood was received in a flask containing the citrate solution, and care was taken to avoid clot formation.

The first case, a European male, aged 15, in the last stages of disease, showed no reaction to the subcutaneous injection of 15 c.cm. freshly drawn citrated blood into the flank; the injection was well and painlessly borne and the resultant swelling subsided in the course of a day or two without infiltration or induration. The patient, however, refused further treatment.

The second case was that of a European male, aged 32, with ambulatory pulmonary tuberculosis. Sputum was positive and he had usual signs and symptoms of active disease. On Jan. 6th, 1921, 15 c.cm. of fresh citrated blood were injected into the flank. No immediate reaction occurred, nor elevation of temperature. On the following morning the patient got up and walked about as usual. He complained of some pain in back and joints and a slight erythematous rash developed on the trunk. These conditions subsided within seven days and the patient stated that he felt an improvement in general condition of health. On the 13th a second injection —20 c.cm.—of fresh citrated blood was administered. An immediate reaction resulted; slight rise in temperature, pains in the limbs and back, and a profuse erythematous eruption on trunk and extremities. This condition persisted for five days, when patient "felt better." The temperature on the evening of Jan. 19th rose to 101° F., the skin became moist; he slept well that night and perspired profusely. Next morning the temperature was 100·8°, rising that night to 102·4°. The patient slept well, again perspired profusely, and the following morning showed a temperature of 98·6°. The subnormal was regained on the 22nd—that is to say, the tenth day after the second injection. From this date until March 11th a considerable improvement was noted in temperature, the chart showing a line of less variation and remaining practically subnormal throughout this period of time. The weight of the patient improved markedly. During the month prior to the commencement of treatment he lost 2 lb. From Jan. 6th, when treatment began, till March 11th, he gained 5¼ lb. He slept progressively better, his colour improved, his appetite became good, his cough almost ceased, expectoration greatly diminished, his strength steadily increased. He was then sent for general health treatment to the Military Hospital, Pretoria, as I had to leave for Europe. While tubercle bacilli were still present in the sputum, it must be remembered that only two injections of the citrated blood were administered, and these were immediately followed by great improvement in his general condition. No other treatment was employed, the patient meanwhile performing his usual avocations, and no other explanation of this improvement, than that recorded, appear to me obvious.

Weight Chart (Second Case).



Showing improvement from Jan. 6th, the date on which treatment began.

The third case was that of a native female, aged about 47. The case was apparently tuberculous, but no report on sputum was obtained. I would merely record that two injections were given as in Case 2 with very similar results, and improvements noted.

Conclusion.

The foregoing is a short account of my endeavour to produce a substance such as was desired, and a record of its use in three cases in which it was tried. The clinical experience, it must be confessed, is very meagre, but in the one case in which it was possible for me to make careful records, the results were certainly encouraging. I have felt that it may be desirable to record them as, such as they are, they followed the employment of what I may call a combined method of immunisation—i.e., an attempt to utilise three factors two of which, namely, the use of serum from an animal naturally resistant to tuberculosis and the exhibition of red cells from an immunised animal, have already been tried separately. The third, the utilisation of the serum of a pregnant animal, has not, so far as I know, hitherto been attempted. Hence this paper may serve to direct attention to a method of further trial with which I propose to render myself more familiar.

By the courtesy of Dr. Watkins Pitchford, the director of the South African Institute for Medical Research, a series of experiments with this immunised blood is now being made by Dr. J. Becker of that institution, and I hope an account of these will shortly be published. I wish to record my thanks to Dr. Becker and Mr. Canham for their kind and skilful assistance, and also my obligations to Dr. Andrew Balfour, Director-in-Chief of the Wellcome Bureau of Scientific Research, who placed at my disposal the library of that institution.

CHRONIC DISEASE OF THE VERUMONTANUM AND SEXUAL NEUROSIS.

BY M. W. BROWDY, M.B., CH.B. GLASG.

Genito-urinary neurosis, although of great importance to the venereologist and neurologist, is a sadly neglected subject in this country. The disease is not rare and its prevalence can be gauged from the number of those who have been victims of gonorrhœa; in this disease it is seldom that the verumontanum, or colliculus seminalis, the delicate, highly sensitive erectile structure occupying the floor of the prostatic urethra, escapes temporary or permanent damage. That affections of this part of the urethra should give rise to profound neurotic manifestations and to disturbances in the urinary and sexual functions is not surprising when we consider the relationship of the colliculus to the prostatic and ejaculatory ducts, and to the uterus masculinus—the homologue of the female uterus and vagina. It is the most sensitive part of the urethra, and probably the seat of sexual sensibility. It also plays an important part in the mechanism of ejaculation; during erection it becomes turgid, the mouths of the ejaculatory ducts are thus directed forwards. Hence any pathological change in the colliculus will be reflected adversely in the process of ejaculation. The prostate, prostatic urethra, and verumontanum are richly supplied with nerves, which through the sacral plexus are in

intimate relationship with the hypogastric plexus, and also with the sympathetic, so that it is perfectly clear why irritation of peripheral nerve terminals in the prostatic urethra by chronic inflammatory processes should transmit that irritation to other nerves communicating with the same plexus; thus neuroses of most varied character appear.

Ætiology.

Localised hyperæmia of the verumontanum can be produced by sexual excess, by masturbation, by artifices to prolong the sexual act or to prevent pregnancy, such as digital compression of the urethra, constriction at the peno-scrotal juncture by a rubber band, or by mental effort to arrest the orgasm before ejaculation, and by the practice of withdrawal.

The commonest cause of a lesion in the colliculus, however, is gonorrhœa, and in the majority of cases one finds the lesion associated with disease in other parts of the posterior urethra, or in the prostate and its ducts, the seminal vesicles and ducts, and the epididymes. Yet in a good many cases, even when diseases in these organs have yielded to treatment, changes, such as infiltration, give rise to symptoms which must not be confused with the hypochondriacal symptoms, due to chronic gonorrhœa, which I have described elsewhere.[1]

Symptoms.

The symptoms naturally vary according to the actual pathological lesion present and also to the individuality of the patient. The more highly strung his nervous system, and the higher his moral tone, the more will the patient suffer. The usual type met with is a youth between the ages of 20 and 30, although no age is exempt. He is broody and melancholic, apathetic, listless, and depressed. Worry and anxiety are depicted on his face, which is drawn and pale. The pupils are dilated. He tells his story with fear and shame, as usually he has no one to confide in. He complains of vague pains about the genitals, thighs, and lower abdomen, which occasionally become acute and "shoot" into the testicles. In the urethra there is a burning pain, and after micturition there is often a sensation as if a "hot wire" was being pushed down the passage. Some complain of a heaviness in the perineum, dribbling of urine, and frequency of micturition, with occasional terminal hæmaturia. Others complain of prostatorrhœa, spermatorrhœa, nocturnal emissions, hæmospermia (bloody semen), painful ejaculations, poor erections and premature ejaculations—the last-named being due to the fact that the nerve centres respond too readily and too quickly to irritating stimuli from the diseased colliculus; hence the erection is poor and imperfect and emission premature.

I have seen cases where priapism was the only complaint, and in others loss of sexual desire was the only symptom. Quite recently a case was referred to me, where, amongst the genital symptoms complained of, alopecia areata developed, after two years of mental anguish. The mind becomes obscured and obsessed by these symptoms which combine to render the patient hysterical and neurotic. On examination the urethra is usually found to be exceedingly sensitive to the passage of a bougie. The urine is found loaded with phosphates, and occasionally a trace of albumin is found. Threads may or may not be present, depending upon the pathological condition, and, if present, their macroscopical appearance varies, and is not of pathognomonic importance. A point worth mentioning is that often severe recurring herpes appears upon the prepuce, presumably without cause, after each intercourse, and often there is irritation about the anus; this is troublesome and annoying to the patient. I have found that in the majority of cases it is due to reflex irritation from a diseased prostatic urethra.

Diagnosis.

In order to investigate thoroughly the character of a diseased colliculus, a posterior urethroscope is essential. I usually employ a curved tube of the size of No. 26 French, with a capacious notch on the under surface of the curve. This instrument is passed as easily as an ordinary bougie, and when in position and the obturator removed allows even an enlarged verumontanum to enter the fenestrum without dragging on the side of the urethral walls. When the ordinary straight urethroscopic tube, preferred by Luys,[2] is used I find the picture is obscured by flooding with urine, and by bleeding, which is sometimes very frequent, and requires constant swabbing. Often, also, severe pain is produced in its passage unless a local anæsthetic is used, and finally, instead of a complete colliculus, only a portion can be seen at the extremity of the tube. The curved tube, made by Gentile of Paris, when fitted with a Luys' or Valentine's lamp, serves fairly well for a preliminary examination, and is excellent for therapeutic purposes. If a minute examination is required for diagnostic purposes, however, I prefer Wossidlow's apparatus,[3] with which the posterior urethra can be inflated with air (the disadvantage here being that the air escapes into the bladder, causing discomfort), or can be distended with water as in Goldschmidt's irrigating urethroscope. A complete examination can thus be made, without the picture being obscured by the presence of blood, which is carried away by the flowing stream of water. The walls of the posterior urethra are separated and the picture greatly magnified by a telescope; in this way every detail can be examined. The marked anæmia produced by the water pressure is a disadvantage, as the colour changes are modified, but polypoid excrescences can easily be seen as they wave about in the water; another disadvantage is that therapeutic applications are difficult with this instrument. With the aid of both tubes, however, examination and treatment can easily be carried out.

On urethroscopic examination of the prostatic urethra the colliculus is seen to vary even in health, as to dimensions, aspect, and even situation. Thus considerable experience is required to decide between the pathological and normal. On an average the colliculus is about the size of a split pea, but its dimensions are said to vary in proportion to the size of the urethra and development of the penis. In shape it is a semi-globular protuberance, and its colour is yellowish-rose, not so bright as the surrounding mucous membrane, which is thrown into folds. On each side there is a shallow groove containing numerous punctiform depressions, the orifices of the prostatic ducts. The openings of the ejaculatory ducts, although larger, are seen with difficulty, as they vary in position and number. The uterus masculinus, however, can easily be seen as a fine slit in the anterior declivity of the verumontanum.

Pathology.

Pathologically, chronic disease of the colliculus, like disease in the anterior urethra, is characterised by infiltration of embryonic cells in the mucous membrane, which in the course of evolution become transformed into fibrous tissues. These infiltrations are classified, according to their stage of evolution, as soft and hard. Soft infiltration of the verumontanum is very common, which when observed urethroscopically is then found to be swollen, dull red in colour, cyanotic, and lustreless. Its surface loses its smooth aspect and becomes wrinkled; occasionally its colour is bright red, and it seems pitted, and looking like an over-ripe raspberry. It bleeds very readily, and with the irrigating apparatus small polypoid excrescences can often be seen waving about in the water. The orifice of the utriculus is inflamed and gaping; the openings of the prostatic and ejaculatory ducts appear swollen and surrounded by a prominent border from which pus is seen oozing.

When this picture is seen the disease has certainly extended to the prostate, vesicles, and epididymes. In fact, chronic gonorrhœal infection of the prostatic urethra is very rarely present without involvement of these glands. If soft infiltration is localised to the verumontanum then some other cause than gonorrhœa must be sought for. When the disease

has reached the stage of hard infiltration the mucous surface loses its polish, becomes dry, leathery, and dirty grey in colour. The epithelium often appears to be desquamating, which process can be recognised by the appearance of threads in the urine. Later the colliculus becomes flattened, pale, withered, and unrecognisable. The openings of the glandular ducts are involved in this fibrous contraction, and become distorted and narrowed or even closed. They are seen surrounded by a red areola, which contrasts markedly with the pallor of the surrounding tissue. This distortion of the ejaculatory duct explains the severe pain complained of during ejaculation. The glandular elements are not so common in the posterior urethra as in the anterior, yet cystic conditions are often found, especially in the post-montane space, which are easily overlooked.

The pathological states described are mostly due to gonorrhœa, yet I am certain that the repeated congestion produced by the other factors previously mentioned produce catarrhal changes with small-celled infiltration. This hyperæmic condition becomes localised in the colliculus, and in its progress the prostatic and ejaculatory ducts are involved.

Treatment.

As regards treatment, it is extremely important to obtain the confidence of the patient. It must be impressed upon him that he is not the only sufferer from this malady, that his case is thoroughly understood, and that his symptoms are not due to mental aberration or foolishness. He must be encouraged to tell his story, and the examiner must be a ready listener and sympathiser. When confidence has been established a careful examination must be made of the urethra and adnexa.

If the prostate and seminal vesicles are diseased they must be treated, and finally a careful urethroscopic examination of the posterior urethra is essential for discovery of the exact pathological lesion existing. If the colliculus is simply congested or hyperæmic, owing to masturbation, onanism, &c., and no evidence of old gonorrhœa can be found, I obtain great improvement from passing a large, cold, metal bougie into the bladder, which is left there for a few minutes; after withdrawal the posterior urethra is irrigated with a 1–10,000 silver nitrate solution. This is accomplished by my pattern of irrigating outfit. If the verumontanum is in a state of soft infiltration, it is important to attempt to arrest the progress of the disease before the sclerotic stage is reached and the mouths of the prostatic and ejaculatory ducts become involved in the contraction.

The most satisfactory way of causing absorption of the infiltration is to dilate gently with metal bougies, and then to paint the colliculus, through the endoscope, with various medicaments. I usually commence with tk. iodi at weekly intervals. If progress is not satisfactory I use a weak solution of carbolic acid or copper sulphate; but the most satisfactory is a 5 per cent. solution of silver nitrate. The solid caustic for "touching up" recommended by Lallemand must never be used, as it might produce sterility by occluding the ejaculatory ducts. The various drugs can be applied by means of a catheter syringe, such as Ultzmann's, but I prefer my own pattern,[4] as with this instrument better localisation of the drug is obtained. Nothing stronger than a 1 or 2 per cent. solution of silver nitrate should be used with the syringe, or acute epididymitis may be set up.

When there is distinct evidence that the sclerotic stage has been reached, injections are valueless, and resort must be had to dilatations. When the largest metal bougie has been used, I prefer to continue with Kollman's posterior dilator, followed by an intravesical irrigation of weak silver nitrate solution. If polypoid excrescences or papillomata are present they are best destroyed by careful application of the galvano-cautery.

When all pathological changes have been dealt with and neurotic symptoms still persist, improvement often follows application of the constant current, by means of a suitable electrode, to the verumontanum. I employ from 2–5 milliampères, applied for from 5 to 15 minutes twice weekly. Some authorities recommend Winternitz's[5] cooling sound, but I find no more benefit from this instrument than from the ordinary metal bougie, beyond the fact that it has a psychological effect.

Internal remedies are seldom of much value. Quinine, iron, and pluriglandular extracts have a beneficial tonic effect. Occasionally I employ a sedative; I prefer small doses of bromide with ext. salix nigra or hyoscine. Aphrodisiacs, such as phosphorus, strychnine, damiana, yohimbin, &c., are distinctly harmful, as they irritate an already over-irritated organ.

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ANTIDOTE TO THE TOXIC EFFECTS OF EXCESS PROTEIN DIET DURING LACTATION.*

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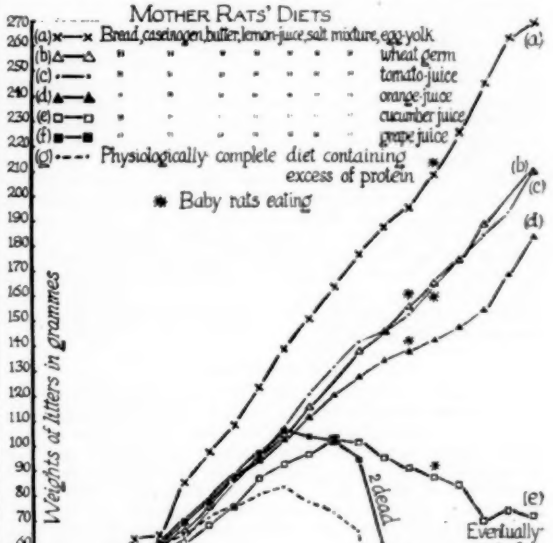
IN view of the importance to the pediatrician of experiments on the growth of suckling animals when their mothers are receiving special diets and the possible connexion of the symptoms produced by excess protein feeding on rats with the convulsions of babyhood, it has been thought well to give an early


MOTHER RATS' DIETS
(a) Bread, caseinogen, butter, lemon-juice, salt mixture, egg-yolk.
(b) " " " " " " " wheat germ
(c) " " " " " " " tomato-juice
(d) " " " " " " " orange-juice
(e) " " " " " " " cucumber juice
(f) " " " " " " " grape juice
(g) Physiologically complete diet containing excess of protein
* Baby rats eating
Weights of litters in grammes
Days
2 dead
1 dead
Eventually 3 out of 6 survived

Curves showing variations in weight of litters whose mothers were given different diets. Each litter consists of six baby rats.

* The cost of these experiments was defrayed by a grant from the Medical Research Council.

brief account of the results of recent work on this subject. As already reported in THE LANCET,[1] excess of protein (about 46 per cent. of the total solids) given to nursing rats causes spasms and ultimate death of the offspring, although the mother does not appear to suffer. Milk acts as an antidote. Experiments to discover exactly what it was in milk which protected the young pointed in the direction of vitamin B.[2]

This summer experiments involving 19 common foodstuffs, 75 litters, and approximately 450 sucking rats have shown that the antidote has the same distribution and characteristics as vitamin B. The basal diet contained excess of protein together with butter, lemon-juice, and salt mixture. Complete antidote effect was obtained by adding any of the following fruit and vegetable juices: tomato, potato, carrot, and artichoke. Apple, orange, beetroot, and vegetable marrow juice came next in protective power. Cucumber juice had little protective effect and juice expressed from grapes (said to be the stand-by of nursing mothers!) practically none. Whole foods such as wheat germ, yeast, and egg yolk protected the young, and so did soya bean meal given in larger amounts. The rats whose mothers were obtaining egg yolk in their diet were the largest and most fit yet seen. Extracts of beef muscle, cod and herring muscle were protective, as also were watery extracts of wheat germ and marmite. (The proteins of the latter were previously precipitated by 80 per cent. alcohol.) Whey in large amounts (100 c.cm. per mother) protected the young. Exactly similar results were obtained from wheat germ, tomato, and marmite extract when the basal diet had its sources of vitamins A and C and the salt mixture omitted.

From these experiments it will be seen that any danger from excess of protein in the nursing mother rats' diet can be obviated by including in that diet foodstuffs or extracts rich in vitamin B. Best of these are tomato, wheat germ, egg yolk, and yeast preparations. It is possible that these experiments are applicable to human beings. Growth curves of a few of the litters are shown illustrating the great difference between the effects of different foodstuffs.

[1] THE LANCET, 1921, i., 1240, and 1922, i., 323.
[2] Biochemical Journal, 1922, xvi., 78.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

THE CHANGES IN MEDICINE AND ITS METHODS IN THE PAST 45 YEARS.

AT the opening session of this section of the Royal Society of Medicine on Oct. 24th, Dr. G. NEWTON PITT delivered a presidential address. He said:

There has been a far greater increase in our knowledge of disease during the past 45 years, which covers the period of my own personal knowledge of medicine, than in any previous similar period of time, and it may not be without interest to indicate briefly some of the changes which have taken place both in our knowledge and in our treatment. The advance in knowledge and the consequent improvement in treatment has been due mainly to: (1) Bacteriology, which has indicated the ætiology of diseases and has led later on to the use of sera and vaccines; (2) the revolution in surgery; (3) the establishment of laboratories with microscopical and biochemical experts; (4) the much more minute attention which is now paid to physical signs and the correlation of them; (5) the use of improved apparatus for investigations; (6) experimental medicine; (7) the development of libraries and of systematic abstracts and catalogues of literature.

1. *Bacteriology.*

The value of bacteriology has been the great outstanding feature of the period, and it is the recognition and cultivation of the various organisms which have enabled us to clear away a vast amount of speculation and to replace it by definite knowledge as to the ætiology of the various diseases. The most important discoveries were the organism of enteric by Eberth in 1880, of tubercle by Koch in 1882, of malaria by Laveran in 1881, and later of its life-history by Ross and others, of diphtheria by Klebs-Löffler in 1883, and of syphilis by Schaudinn in 1905. Most of our differentiation of tropical diseases is dependent on similar knowledge. Vaccines prepared from the organisms have in some cases been of extreme value and the most striking is the preventive inoculation against enteric by Sir Almroth Wright which has almost eradicated the disease. The detection of tubercle bacilli has simplified our knowledge of the tuberculous processes, so that the disease is now treated at a much earlier stage and consequently with far better results, and the mortality of phthisis has been reduced from 1875 to 872 per million living. We now know that everyone in town life is probably frequently infected, that every adult has a healed tuberculous focus, and that recovery from infection is the rule and not the exception. Forty-five years ago the possibility of recovery was generally questioned and heredity was looked upon as the most important causative factor. Tuberculin as a means of treatment has quite failed to meet the expectations which were once entertained. The further diminution of tuberculosis in the future will mainly depend upon improving the physical condition and the surroundings of the individual. Undoubtedly sanatoria have been of very great value in indicating the necessary restrictions of a tuberculous patient, but the after-treatment often fails for working men, and many within four or five years die because they are almost always compelled to revert to their previous mode of life and as semi-invalids for some two or three years are unable to earn sufficient to enable them to rest when necessary and to maintain their nutrition. The use of sera and vaccines now play a very important part in treatment and their value will increase still more as our knowledge about their limitations becomes more defined. Some of the most useful sera are those for combating diphtheria, typhoid, tetanus, cerebro-spinal fever, and dysentery. The use of diphtheritic antitoxic serum has reduced the mortality in large hospitals from 40 to 7 per cent., yet, owing to its delayed use in many districts, the total mortality in the country shows no sign of diminution but rather the reverse. The one common organism which the blood has the greatest difficulty in conquering is the streptococcus, and at present no very potent antistreptococcic serum can be prepared and vaccines also too often fail to save the patient when the blood has once become infected.

2. *The Revolution in Surgery.*

The greatest change due to bacteriology has been the revolution in surgery. With the onset of bacteriological investigation it became possible to show whether a wound or instruments were sterile, and it was for the first time realised that the skin and dirty instruments were the origin of the infection of surgical wounds. Forty-five years ago, when only the pioneer operators were using the carbolic spray, surgeons were quite content if the pus in wounds were laudable—i.e., not offensive. Operating coats were invariably dirty; gloves, caps, sterile overalls and dressings were unknown, and as a consequence most wounds suppurated, and one of the most valuable changes was the introduction of sterilising apparatus. In the early part of the period the mortality of all laparotomies was so high that they were generally limited to a small incision to open an abscess or to drain an obstructed bowel, but operations in the pelvis, such as ovariotomies, were beginning to meet with success, as if peritonitis developed it was far from the diaphragm and might

remain localised. One of the greatest changes in treatment took place when surgery became aseptic, so that it was possible to deal with those abdominal lesions which were not amenable to medical treatment. The results of gastro-enterostomy, gastrectomy, hepatic and pelvic surgery, and the relief and removal of obstruction, especially of the large bowel, now form a very large and most successful part of the operations of modern surgery. At the present time the abdomen is possibly opened too frequently, on the assumption that the risk is negligible; but the number of cases in which the symptoms have not been relieved and even occasionally made worse are not generally appreciated as they are usually not published. The majority of cases of gastric and duodenal ulcers will heal under medical treatment, but there remain probably one-third which, owing to perforation, adhesions, fibrosis, or other mechanical conditions interfering with peristalsis, can only be relieved by surgical treatment; with modern methods of diagnosis also the presence of an ulcer can be determined much sooner and with far greater certainty than formerly. One would, therefore, for both reasons have expected that the total number of deaths from ulceration would have been markedly diminished. Yet the contrary is the case, for the extraordinary fact remains that as the records at Guy's Hospital show the total mortality from gastric and duodenal ulcers is at the present day greater than it was 40 years ago, and not only so, but the number of fatal cases of peritonitis is also greater.

The number of fatal cases in quinquennial periods are shown in Table I.

TABLE I.

Years.	Peritonitis.	Gastric ulcer.	Duodenal ulcer.	Perityphilitis and appendicitis.
1880–84	176	0	0	9
1885–89	192	27	2	12
1890–94	257	35	14	34
1895–99	250	35	13	65
1900–04	316	46	17	78
1905–09	376	44	22	95
1910–14	277	86	45	64
1915–19	285	83	38	91

During the period 1880–84 there were only nine cases of fatal peritonitis which were not due to cancer, tubercle, or abdominal operation for other than appendicular trouble; all but one were recognised as due to perityphilitis. It is therefore clear that there has been a steady increase in infective processes in the alimentary canal for the whole period, and the number of fatal cases of duodenal ulcers and of appendicitis increased ten-fold and eight-fold respectively in 25 years. In 1880 there were in the hospital five cases of appendicitis, one of duodenal ulcer, and six of gastric ulcer.

The development of the incidence of appendicitis is the most remarkable. In the Transactions of the Clinical Society there were only 10 papers on the subject in the 23 years 1868–90, while there were 16 in the next seven years. Examination shows that at Guy's Hospital there had only been 16 deaths from perityphlitis or appendicitis between January, 1880, and June, 1889. In the latter half of 1889 there were five, 10 years later the yearly average was 13, and for the past 15 years it has been over 20. About 1889 not 20 cases of appendicitis were admitted yearly into the hospital, 10 years later there were 100, and now between 300 and 400. In the early days the small figures were not due to cases not being recognised, because an examination of the post-mortem reports for the three years 1880–82 shows that there was only one case of peritonitis during those three years the cause of which was not ascertained and which might possibly have been due to appendicitis. The inflammation formerly was also much less acute, as out of 11 cases in 1888 the appendix was only removed in one and there were no deaths. Sir Charters Symonds was the first to remove an appendix during a quiescent period; this was in 1885. During the early part of the period the cases were admitted into the medical wards and the mortality was small; as the type changed surgical interference became necessary at once and in 1911 three-quarters were admitted into the surgical wards, and now they all are, except one or two that have not been recognised on admission. It is worthy of note that influenza started late in 1889 and has been prevalent ever since.

3. *Laboratory Methods.*

Another notable advance is in the information which can now be obtained from the microscopical, cultivation and chemical examinations, of the secretions, the excretions, and the blood. These have greatly extended the range and accuracy of our knowledge. The staining of sputum was not general till 1885. The staining and counting of blood cells are now so familiar that we are apt to forget that these examinations were not in use until after 1898. The Durham-Widal reaction for typhoid dates also from that time and the Wassermann reaction from 1906. The estimation of urea and of sugar in the blood are of quite recent date. Unfortunately it is generally necessary to refer these examinations to a laboratory and to trust to someone who has not seen the patient. There is a tendency on the part of a practitioner to rely upon the report to the neglect of his clinical acumen. It would appear probable that team-work in private practice will become not infrequent, but it will be essential that the final judgment on all the evidence should rest with the clinician.

4. *Attention to Physical Signs.*

Much more minute attention is now being paid in medical cases to the physical signs and their number has been greatly increased. The researches of the French school, and of Ferrier, Horsley, Head, Sherrington, Gordon Holmes, and others have revolutionised our knowledge and our mode of examining nervous cases, and this is very apparent if such books as Wilks's or Ross's Nervous Diseases be compared with a modern work. The association of physical signs as syndromes, the minute attention to the changes in sensation, motion, and reflexes, and when necessary a lumbar puncture, now enable us generally to make an accurate diagnosis of the nature of a nervous lesion and its site. Although great advance has been made in diagnosis, the improvement in the results of treatment of most nervous diseases has not been appreciable, as at present the patient does not come under observation sufficiently early, and many of the nerve changes have already become irreparable.

5. *Apparatus for Clinical Investigation.*

Sigmoidoscopes, bronchoscopes, arteriometers, electro-cardiographic apparatus, and more especially X rays give accurate information which was not formerly obtainable, but the latter far outweighs the value of all the rest. The use of X rays with bismuth meals, enables us to observe the movements and to map out the contour of the alimentary canal from end to end and to preserve permanent records of the same. The recent introduction of more powerful machines will lead to the discovery of more minute changes and also possibly, aided by the deep injection of gas, to the definite outlining of the solid viscera. The X ray investigation of the vascular and respiratory organs in the thorax provides one of the most valuable means we possess. X rays and radium are also of increasing therapeutic value, but the introduction of these very powerful machines will prove a source of extreme danger to their habitual users unless more stringent precautions for their daily use are enforced.

6. *Experimental Medicine.*

Much experimental work on animals has been carried out during this period. We have by this means learnt how to improve operative technique—to obtain accurate knowledge of the tracts which degenerate in the central nervous system corresponding to definite localised lesions. The removal of the thyroid by operation has led to a great increase in our knowledge of its functions and concerning the myxœdema which follows its complete removal. This line of research by

experiment has very greatly advanced our knowledge and treatment of disease.

7. *Facilities for Learning.*

At the present time there are greatly increased facilities for learning what is known and what has been published on various affections, by means of the Index Medicus, the Centralblatts, and various periodicals devoted to special subjects which systematically abstract all current literature. There is no doubt also that the amalgamation of the societies into the Royal Society of Medicine with its splendid library has been of great value to us all.

Change of Type of Disease.

I have already alluded to the greatly increased frequency and virulence of intestinal ulcers in the stomach and duodenum, and the most striking instance of change of type is appendicitis, which from being a negligible disease in 1880, when not a single case was admitted to a surgical ward and only one occasionally to a medical, remained infrequent until 1889 or 1890. Over 350 cases are now admitted each year, and it has become a daily danger, and in spite of early operation the mortality has steadily increased. Influenza also has been a perennial scourge of recent years and may possibly be the cause of the universality of appendicitis, as the great increase in frequency followed on the epidemic onset of influenza. The most striking example of a diminished virulence has been in scarlet fever, the mortality of which has decreased from 675 to 38, in the "sixties" it was nearly 1000. Formerly a very common and virulent disease with a mortality as high as 30 per cent., which fell in 1900 to 5 per cent., and is now less than 1 per cent., so that it is now no more severe than it has long been in Paris where the type has been a light one. The danger and the complications largely depend upon the condition of the adenoids and tonsils and the mortality rapidly diminishes after the age of 5. (Table II.)

TABLE II.—*A Comparison of the Mortality per Million living in England and Wales in 1880 and 1920.*

	1880.	1920.
Total mortality	19,400	12,100
Small-pox	25	0
Typhus	21	0
Typhoid	261	14
Scarlet fever	675	38
Measles	478	191
Pertussis	530	117
Phthisis	1875	872
Nervous diseases, excluding hemiplegia	over 1000	574
Liver and gall-bladder	278	175
Diphtheria	109	150
Pneumonia	979	991
Respiratory disease, excluding pneumonia	2700	1156
Cancer	516	1161
Hemiplegia	1000	874
Nephritis	418	335
Heart disease	1352	1413
Pregnancy and parturition	76	105
Digestive disorders	700	646

Glanders, hydrophobia, and tetanus have become excessively rare, and there have only been 250 cases of anthrax in the last 15 years. Improved methods of treatment have reduced the mortality of the following diseases to a negligible quantity. Typhus, small-pox, glanders (the last case was in 1916), anthrax, hydrophobia (the last case was in 1911), and tetanus due to the use of serum, while the mortality from measles, pertussis, and phthisis has been greatly reduced.

A very great change has taken place in the amount of stimulants which are used, partly due to the habits of the people, but still more to the appreciation by the profession of the importance of temperance. Formerly, 2 pints or more of beer or porter was part of the ordinary diet for every hospital patient, and large amounts of stimulants were usually prescribed in serious illness. Now they are only given in special cases and in great moderation, much to the advantage of the patient's health.

Now, in what direction is medicine most likely to advance profitably in the immediate future? There is no doubt Sir James Mackenzie is right in insisting that our most urgent need is a fuller knowledge of the habits and slight deviations from health which lead to disease later on. A thorough and prolonged study of the life-history of patients will ultimately throw light upon the ætiology of degenerative changes, of which at present we are ignorant, and yet when the changes have taken place medicine is no longer capable of checking their progress. The mortality from renal, vascular, and most nervous diseases, and from pneumonia and bronchitis, has not appreciably diminished during the past 50 years. We have yet to learn what are the infections which ultimately produce arterio-sclerosis. We do not yet appreciate the causation of nephritis, whether tubal or interstitial. We are beginning dimly to realise that cirrhosis of the liver is but very indirectly associated with alcoholism. It is a degenerative change which is very commonly met with in aged domestic animals of all kinds, whether dogs, cats, horses, or cattle, and the causation of which is certainly not alcohol. Twenty horses on an Irish estate have recently died apparently from eating ragwort. The chances are 7 to 1 against a chronic drunkard dying of cirrhosis of the liver, while Sir F. Mott has shown that while there are a very large number of inebriates in asylums, cirrhosis is unknown there. Septic infection from the gums and teeth, and to a less extent from the tonsils, is a most important factor in inducing degenerative changes, and if the State would undertake the provision of free dental treatment for the poor the efficiency of the working man might be extended several years. Chronic nasopharyngeal catarrh, which is so often neglected, is a precursor of many of the conditions of bronchitis in old people.

As in the past so in the future, the results of prevention of disease will be infinitely more efficient than those of treatment will ever be. When we can prevent the heart lesions of rheumatic fever we shall most efficiently deal with the cardiac failure of young people which we do not treat much more successfully than formerly. Gout and rheumatoid arthritis and other degenerative lesions may be prevented in the future, they cannot be cured at present.

SECTION OF OTOLOGY.

A MEETING of this section of the Royal Society of Medicine was held on Oct. 20th, when the chair was occupied by Sir CHARLES BALLANCE.

Standardising Tests for Hearing.

Mr. SOMERVILLE HASTINGS and Major TUCKER gave an interesting description and demonstration of an attempt they have recently evolved, by means of an electrical apparatus, to standardise acuity and range of hearing. The work arose out of the need, during the war, to receive the earliest possible intimation of the approach of enemy aircraft, for which persons with acute hearing, but physically unfit for arduous warfare, were employed. A listening qualification for this purpose was very necessary. With the coöperation of Mr. Hastings the apparatus had been made to apply to the deaf. The conditions to be fulfilled included the following: The sound must be a pure musical note; its pitch and intensity must be exactly reproducible from day to day; there must be a logical scale of intensity; the signals conveyed to the ear must be made intermittent at will; the sound must be reproduced so close to the ear that there would be no interference owing to the reflections of sound in the room; the limit of acuity should be rapidly determined to prevent the subject from educating himself too well, or losing acuity through fatigue. The sound was generated by an oscillatory electric current actuating the diaphragm of a telephone. A wireless valve was used, the space inside being rendered an electric conductor by the particulate electrons emitted from an incandescent filament. By means of a grid, the intensity of the transmitted sound could be varied at will. The oscillatory current could be built up to a high value, and could then be used to operate a telephone and produce a sound. Notes ranging from 300 vibrations per second to a pitch so high as to be scarcely distinguishable could be produced. To reduce the oscillatory current to the required value, it was passed into a Wheatstone bridge circuit. The subject to be tested was seated,

with closed eyes and one hand on the table. He was told that when he heard the sound he was to raise a finger, lowering it again when he failed to hear anything. In addition, it was possible to introduce into either ear a disturbing sound of any desired intensity, thus enabling paracusis to be tested, either as between individuals, or for different ears. The sound used could also be measured in absolute units of energy, and from this it was hoped valuable information would be derived. The usual methods of testing, such as the tuning-fork, the conversational voice, the whisper, the acoumeter, were unsatisfactory as they were influenced by extraneous sounds, chiefly reflected.

Mr. Hastings said the results obtained had been extraordinarily constant. Qualitatively they agreed with those obtained by other means. A disturbing sound in the opposite ear made scarcely any difference, by this method, in the hearing power of the organ under test. But if the disturbing sound were applied to the tested ear in the normal person, the intensity of the signal had to be increased, in order to be perceived, from 17 to 24 times, though in internal ear deafness and cases with tympanic perforation the stimulus had to be increased no more than nine times. Patients with paracusis—who could hear better in a noise—required only twice the stimulus. They had never yet encountered an individual who could really hear better in a noise.

A striking demonstration was then given on a member of the section, and Sir CHARLES BALLANCE and several members spoke highly of the instrument.

Exhibition of Cases and Specimens.

Mr. E. D. D. DAVIS exhibited the temporal bone from a man who had tuberculous lateral sinus thrombosis and extra-cerebellar abscess. He was admitted suffering from acute pneumonia. The temperature subsided by crisis, and the chest signs disappeared. He complained of occipital headache. No tubercle bacilli were found in the sputum. Later he had vomiting, and his temperature was 101·4° F. He was found to have suppuration of the right middle ear of long duration. The mentality was sluggish, the neck stiff, and the deep reflexes were increased. Death occurred suddenly. Operation had been refused. An abscess containing about 2 drachms of pus was found on the surface of the right cerebellar hemisphere, the dura for 1½ square inches was covered with pale granulation tissue, and the temporal bone was extensively necrosed in front of the lateral sinus groove, and a sinus led outwards into an abscess in the mastoid process. There were also a number of other pathological changes. Sections of the granulation tissue and dura were reported to be tuberculous.

Sir JAMES DUNDAS-GRANT showed a middle-aged man who was quite deaf in one ear, and developed acute suppuration in the opposite middle ear. Without waiting for mastoid signs Sir James Dundas-Grant did a Schwartze operation on the functioning ear, fearing that if left to a later stage the hearing might not be recovered. The wound was closed except around a drainage-tube, and on that being withdrawn there was a rapid subsidence of the discharge, healing of the perforation, and restoration of hearing.—Dr. WILLIAM HILL complimented Sir James Dundas-Grant on the result, and said he had never regretted doing a Schwartze operation, though he had repented not having done it.

Mr. ARCHER RYLAND showed a man, aged 30, the subject of absolute bilateral deafness, with almost complete loss of vestibular activity. The deafness was due to congenital syphilis. The voice was quite uncontrolled, and the man had many of the stigmata of inherited syphilis. Wassermann was strongly positive.

Mr. G. J. JENKINS showed a case with spasm of facial muscles, with tinnitus. He did not regard it as a case of tic, but thought it was due to a central lesion, possibly an inflammation of the lower cells of the brain. The tinnitus was probably brought about by a mass movement of labyrinthine fluid, with, perhaps, movement of the stapes.

ROYAL MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

THE second meeting of this Society was held on Oct. 20th, when Dr. MATTHEW WHITE made a short communication on a case of

Asymmetry of the Upper Limbs,

and showed the patient. On examination after an injury to the right shoulder, asymmetry of the arms was noted, the left apparently being the normal one and corresponding to the general development of the body. At the first examination the rest of the body appeared to be symmetrical, but ten months later there was scoliosis with tilting of the head, asymmetry of the face, and, on several occasions, inequality of the pupils. Sensation appeared to be normal in the affected arm; no difference in power as shown by dynamometric measurements was noticed, although the right hand tired more quickly than the left. The skin of the right forearm and hand was "blae" by comparison, and coarse and thickened. Cuts and abrasions on the right arm healed slowly and became purulent. The blood pressure and temperature were identical on both sides. Skiagrams of the bones of the hands and arms showed greater density and thickening on the right side. There was nothing of note in the region of the sella turcica.

Mr. INGLIS POLLOCK made a communication on the

Treatment of Early Opacities in the Senile Lens,

and demonstrated six cases. He referred to a long list of many surgeons who had attempted at different times and in different countries to carry this out with the aid of potassium iodide and other alkaline salts. Nearly all ophthalmic surgeons had seen at times traumatic cataract absorbed in part, and a certain number of cases of the spontaneous absorption of senile cataract were on record, so that it was undoubtedly possible for opacities to disappear in the human lens, but the numerous cases which had been reported, especially during the last 20 years, showed that the alkaline treatment of senile cataract had been used successfully; and that the results were not due to spontaneous absorption nor to clearing of the vitreous or fundus opacities. Early treatment was now recommended in general medicine for every type of disease, and the early medical treatment of cataract should be tried in all cases, the patient not being told of the existence of the cataract, so as to prevent worry becoming an element in the case.

Dr. LEONARD FINDLAY and Dr. J. D. GALBRAITH made a short communication on

The Treatment of Rectal Prolapse in Children.

The method referred to, that of Prof. D'Espine, of Geneva, consists in the introduction of a small amount of absolute alcohol into the loose areolar tissue surrounding the rectum. The operation is simple in technique, efficient in results, and apparently devoid of all danger. The report gave the results in 41 children. In 7 cases prolapse had been in existence for less than one month; in 10 cases it had been present for more than a year. In 2 cases the operation had to be repeated once, and in one case twice, but in all the other examples only one treatment was necessary to obtain a cure. Cure was obtained in 90 per cent. of cases.

Mr. G. H. EDINGTON and Dr. W. B. PRIMROSE made a communication on a rare case of

Polydactylism of the Foot.

The subject of this communication was a male infant aged 4 months. The abnormality consisted of three supernumerary toes occupying the cleft between the hallux and the normal second toe of the left foot. The supernumerary digits were not all in the same plane, one being dorsal and two displaced towards the plantar surface of the foot. These last were webbed in half their length and capable of active

movements; the dorsal digit was not actively mobile. A skiagram showed three supernumerary metatarsal bones, two of which belonged to the plantar toes, and the third, which was imperfect, to the dorsal toe. A wedge of tissue, including the abnormal structures, was removed from the dorsum, and the result showed little difference between the two feet.

Dr. PRIMROSE said that the wedge of tissue removed by Mr. Edington showed upon dissection that the dorsal rudimentary toe had only two phalanges and a very imperfect metatarsal bone which had no tarsal articulation. It was bound to the lateral side of the adjacent toe in a loose manner by fibrous tissue instead of by ligament. The other toes were much better developed. Their metatarsals had tarsal articulations, but they possessed deformed cartilaginous phalanges. These two toes showed the normal arrangement of flexor and extensor tendons, while the dorsal rudimentary toe only possessed an extensor tendon. There are, in addition, two dorsal interosseous muscles, but one of them had the appearance of being formed by the fusion of two adjacent interosseous muscles. The greater part of the blood-supply of these toes was apparently derived from the first dorsal metatarsal artery by two arcuate vessels which crossed the two medial metatarsal bones dorsally. This suggested a relationship of all these toes with the hallux which was of teratological significance. The digital cutaneous nerves were relatively normal.

Reviews and Notices of Books.

TOXÆMIAS OF PREGNANCY.

By GEORGE W. KOSMAK, M.D., Attending Surgeon at the Lying-in Hospital, New York City. London: D. Appleton and Co. 1922. Pp. 232. 21*s*.

THIS monograph presents an important study of a group of diseases of which we really know very little and which have a considerable incidence and a high morbidity. In the present work, after a chapter on the historical aspect of the subject, the author considers the ætiology, symptomatology, and pathology of the toxæmias of pregnancy, including special chapters on the chemistry of the blood and urine. The chapter on the blood has been written by Dr. F. E. Sondern, and that on the urine by Dr. J. A. Killian. In the section dealing with hyperemesis hardly enough stress is laid on the more recent work which tends to prove that in many of these cases the condition is a pure neurosis and that the pathological changes present are entirely secondary. The author also is inclined to place too much importance on the high ammonia coefficient which may well be entirely the result of the accompanying starvation. An excellent chapter is that dealing with the ætiology of eclampsia, in which all the many theories which have been advanced to account for this disease are described and critically reviewed. A perusal of this section, however, leaves one with the impression that we are just as far as ever from a clear conception of the causation of this obscure disease and that there is little to be said for most of the so-called explanations which have been put forward by various authors.

In discussing the pathology the author concludes that the most constant lesions in eclampsia are hæmorrhages, principally in the liver, and degenerative processes involving any one or all of the essential internal organs. Their distribution varies widely and their cause would appear to be some toxic substance circulating in the blood. This toxic substance appears to predispose to hæmorrhages through its solvent action on the endothelial lining of the vessels. In considering the treatment of cases of eclampsia, Dr. Kosmak is on the whole in favour of reasonable conservatism, which he states meets with good results, and he further believes that collected statistics appear to show that the avoidance of shock in the handling of these cases has brought about marked reduction in the morbidity and mortality. It is disappointing to find very little mention in the special chapter on the urine of the value of some of the more modern tests, such as the urea-concentration test or the diastatic test, personal opinion of these aids is almost absent. The final chapter on the chemical changes in the blood in the toxæmias of pregnancy presents a useful résumé of our knowledge of this subject at the present time.

This monograph is a sound summary of difficult problems in metabolism; it should be useful both to practitioner and to teacher.

AIDS TO DENTAL ANATOMY AND PHYSIOLOGY.

By ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S., Fourth edition. Revised by BAYFORD UNDERWOOD, M.B., B.S., L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon and Lecturer in Dental Anatomy, University College Hospital, Dental Department. London: Baillière, Tindall and Cox. 1922. Pp. 170. 3*s*. 6*d*.

THE previous editions of this book by the late Prof. Arthur Underwood attained a considerable popularity, which was well justified by the clear style and apt manner in which the essential facts of dental anatomy were dealt with. Mr. Bayford Underwood has attempted to retain as much as possible the original framework of the book, while bringing it up to date. In this he has been very successful and has preserved in great measure those personal qualities which marked the earlier editions of the book. Occasionally phrases are retained which seem out of harmony with the more modern ideas which have supplanted the views current when they were written. In speaking of Nasmyth's membrane, the author states the older view held by Sir John Tomes, that it represents a thin layer of cementum, and the later view of F. T. Paul that it is purely epithelial; while agreeing with the findings of Paul, Mr. Underwood hazards the suggestion that both theories may be substantially true (p. 46). On p. 83 he states that "the theory that Nasmyth's membrane partakes in any way of the nature of cementum may now be definitely discarded." In this latter statement Mr. Underwood follows modern views, and it is unfortunate that an incomplete revision has allowed the earlier statement still to be retained. Similarly, on p. 109 it is stated that lymphatics in the dental pulp have not yet been demonstrated, while in the next paragraph the work of Schweitzer and others proving the presence of lymphatics in the pulp is described. The chapter on practical microscopy which was omitted from the third edition has now been reinstated in the book, which will be found valuable, not to supplant the larger text-books, but to illuminate some of their dark places.

SOME PHYSICO-CHEMICAL THEMES.

By ALFRED W. STEWART, D.Sc., Professor of Chemistry in the Queen's University of Belfast. London: Longmans, Green and Co. 1922. Pp. 419. 21*s*.

THIS book is intended to assist the advanced student of physical chemistry in filling up the gap between the usual text-books and original sources of literature, and yet to be less highly specialised than a series of monographs would be. The theory of residual affinities is made the starting-point of a series of well-digested essays, all of which fulfil their main purpose of imparting information, and many of them provide really interesting reading as well. A discussion of double salt formation and oceanic salt deposits naturally follows on the theory of residual affinities; then come complex ions and salts, pseudo-acids, and this leads up to the theory of indicators. The subject of non-aqueous ionising media gives us the other side

of the picture of solution. The author then proceeds to deal with colloids, adsorption, catalysis, the spectra of the elements, chemical affinity (thereby referring us once more to the point from which the volume started out), the periodic law, and the structure of atoms. A welcome feature of the book is the fact that the author, being himself an organic quite as much as a physical chemist, is not blind to the important applications of physical to organic chemistry and vice versa; a further attraction is that very little mathematics is involved in the working out of the arguments.

Altogether the book is an example of how useful and interesting a treatise on physical chemistry can be.

SENESCENCE: THE LAST HALF OF LIFE.

By G. STANLEY HALL, Ph.D. London and New York: D. Appleton and Co. 1922. Pp. 543. 21*s*.

Dr. Hall's book is very long and full of information. He has considered the subject of old age from the historical, the literary, the statistical, the biological, and the medical points of view. He has based it partly upon replies to questions sent out to various people asking for their feelings when they reached old age. Finally, there is a long chapter on the psychology of death, the burden of which is that belief in a life after death is waning. Learned and very industrious as the book is, we doubt whether any elderly or old man will derive much strengthening from reading it. Old age is a time for reflection, for a man to do what he can to help his fellows both by example and precept. Temperance in all things, a certain amount of exercise, good reading, and, if possible, the society of the young, will render the downhill journey easy. To our minds a whole philosophy of old age is contained in Waller's poem under that title with its well-known final stanza:—

> "The soul's dark cottage, battered and decayed,
> Lets in new light through chinks that Time hath made:
> Stronger by weakness, wiser men become
> As they draw nigh to their eternal home;
> Leaving the old, two worlds at once they view
> That stand upon the threshold of the new."

CARDIOGRAPHY.

Clinical Electro-Cardiography. By FREDRICK A. WILLIUS, B.S., M.D., M.S. in Medicine. Section on Clinical Electro-Cardiography, The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. London and Philadelphia: W. B. Saunders Company. 1922. Pp. 188. 25*s*.

THE literature of electro-cardiography is becoming so extensive that it is quite impossible for the general physician to keep pace with all of the original papers which are being published. A brief summary of the more recent advances, such as is contained in Dr. Willius's book, serves a useful purpose. The four opening chapters comprise a general introduction to the electro-cardiographic method with references to many of the more important original papers on the subject. There follows a descriptive account of the various types of arrhythmia and other disturbances of the cardiac mechanism, including an interesting analytical study of 500 cases of auricular fibrillation. This group, together with a control series of cases, is subdivided in accordance with the coexisting structural lesions which were present, so as to demonstrate the increased case mortality in various types of heart disease when complicated by the presence of auricular fibrillation. A similar analysis of a large number of cases which showed aberrant Q-R-S complexes is of considerable prognostic value. In an interesting chapter dealing with the significance of a negative T wave, a hypothesis is advanced to account for the varying prognostic importance of this phenomenon in isolated and combined derivations. This hypothesis is to a large extent supported by case-mortality statistics. In the final chapter is included a group study of 155 cases of angina pectoris with reproductions of the records from 46 fatal cases. The reproduction of some of the records has not been very successful, and in Fig. 100 the electro-cardiograms have been printed upside down.

The work proves once again the importance of electro-cardiography as an aid to prognosis. The bibliography is well selected and contains references to many of the more recent original papers.

The Electrical Action of the Human Heart. By AUGUSTUS D. WALLER, M.D., F.R.S., Director of the Physiological Laboratory, University of London, South Kensington. London: University of London Press, Ltd. 1922. Pp. 103. 7*s*. 6*d*.

THE book gives the substance of four lectures delivered in 1913 and deals with fundamental facts and principles concerned in the electro-cardiogram, rather than with its application to clinical uses. In the first chapter the author deals with his own work with the capillary electrometer, which was the instrument used by him when, in 1889, he first showed that tracings of the electrical variations in the human heart could be obtained by leads from the limbs and mouth. The second chapter gives the results of experiments with the string galvanometer. The author's nomenclature differs from that introduced by Einthoven; he recognises only three waves—viz., one auricular and two ventricular, the last two corresponding with the first and second heart sounds. Moreover, he states that the nomenclature now current, which he describes as a complicated rubric, is a meaningless trial of memory, and excludes the simple principle of "strong" and "weak" leads due to the obliquity of the axis of the heart. For this reason, right hand–left foot, lying more nearly parallel with the cardiac axis, is the strongest lead, whereas left hand–left foot is a weak one. The third and fourth chapters are concerned with an analysis of the electro-cardiogram from this point of view.

This posthumous work is a further memorial to the original and independent attitude of its author. A short bibliography is appended.

THE GOLD HEADED CANE.

By WILLIAM MACMICHAEL, M.D. With an Introduction by Sir WILLIAM OSLER, M.D., F.R.S., and a Preface by FRANCIS R. PACKARD, M.D. London: Humphrey Milford, Oxford University Press. Pp. 261. 16*s*.

DURING the first 30 years of the last century a fashion prevailed, especially in books for children, of making inanimate objects relate their memoirs, and recollections of the various owners through whose hands they had passed. As was to be expected, these memoirs were made the vehicle for various moral reflections. Thus we find the Memoirs of a Halfpenny, a Banknote, a Pincushion, and a Peg Top. The last of these lies before us, and the author in his preface, after referring to the Memoirs of a Pincushion, remarks:

> "The work just alluded to was designed chiefly for the use of young Ladies; this is evidently calculated for young Gentlemen, for although the laws of justice, probity, and truth, are of *general* obligation, yet it was imagined, that by consulting *different amusements* and *pursuits*, and recommending the accomplishments *separately*, in which each sex are more particularly concerned, the subjects would become more interesting to those readers to whom they are immediately addressed. . . . ."

It was very probably this fashion which led Dr. Macmichael to call his book "The Gold Headed Cane" and to put into the mouth of the cane biographical details and recollections of the five great physicians through whose hands it had passed, accompanied by reflections upon medicine and medical matters of the time. The cane was successively the property of Radcliffe, Mead, Askew, Pitcairn, and Baillie. The last named died in 1823, and in 1825 Mrs. Baillie presented the cane to the Royal College of Physicians of London by the hands of the then President, Sir Henry Halford, the occasion of the presenta-

tion being the opening of the new College buildings in Pall Mall. To the dignified seclusion in which the cane then found itself we are indebted for its memoirs, so skilfully set out by Dr. Macmichael. Sir William Osler, we note, made a slip in his introduction when he said: "Pitcairn is remembered to-day solely from his association with the cane," for William Pitcairn was remarkable as being the only physician to St. Bartholomew's Hospital who also held the office of treasurer, and the ward called by his name was named after him. His nephew, David Pitcairn, about whom the cane's recollection seems more vivid than about his illustrious uncle, its possessor, was also physician to this hospital. However, the cane's memories of Radcliffe and Mead make delightful reading, and it is most fitting that the latest reprint of the cane's recollections should be published in this country by the Oxford University Press, seeing what a debt that University owes to Radcliffe.

The reprint is one of an American edition, and we are glad to add our appreciation to that of Sir William Osler, who said that its appearance from the press of Mr. Hoeber "is an indication of the zeal with which the study of the history of medicine has been taken up by the profession of the United States." The first edition was published by Mr. Murray in 1827 and another edition in 1828 with 88 additional pages. The present reprint is one of this second edition. A third appeared in 1884, edited by Dr. William Munk, who added some matter of his own in imitation of Macmichael's writing, bringing the work down to 1871.

PRE-OPERATIVE TREATMENT.

La période pré-opératoire. By CHARLES LEFEBVRE, Chef de Clinique Chirurgicale a la Faculté de Toulouse. Paris: A. Maloine et Fils. 1922. Pp. 260. Fr.10.

IN most text-books on surgery we find a brief account of the methods of preparing the patient before an operation. In this little book M. Lefebvre seeks to give a more comprehensive and detailed description of the methods employed than can be found in the average manuals. Describing briefly the effects on the body of any operative interference, and analysing the various organs responsible, he discusses the most useful methods of ascertaining the condition of the function of the organs, and details the treatment whereby any disturbances may be minimised or abolished. The general diseases and intoxications from which any patient may be suffering are discussed in turn, and the various organs and their functions are also separately dealt with, the appropriate examinations and treatment being recommended in each case. The immediate pre-operative preparation is reviewed, and many of the old-time customs—e.g., purging—are swept aside and replaced by the newer methods based on modern conceptions of metabolism and economy in the body.

Although if any one patient were subjected to all the special examinations suggested in this book he would be fatigued indeed before the operation took place, it is useful to find all the necessary details for special examinations in one small volume. As a reference book for the surgeon who is faced with the task of operating on a subject suffering from some general disease or intoxication, or in whom one or more organs are suspected of functioning inadequately, the book should be extremely valuable.

IRRIGATION IN CATARACT EXTRACTION.

By E. A. R. NEWMAN, M.D., B.Ch. Cantab., Lieut.-Colonel, I.M.S., Superintendent of the Milford Hospital and the Dacca Medical School. Calcutta and Simla: Thacker, Spink and Co. 1922. Pp. 124. Rs.4.8.

THE title of this little book is misleading. It is in fact a complete account of the various stages of the operation and after-treatment of cataract as practised by the author, and the number of pages devoted to the special subject of irrigation does not amount to one-fifth of the whole. This method of getting rid of the residual soft matter after the successful extraction of the nucleus is one which has found a large amount of favour among ophthalmic surgeons practising in this country. Indeed, we believe that the majority of them habitually employ it whenever there is any difficulty in obtaining a black pupil without it. The author of this book goes further and advocates its use as a routine measure, even when there is no soft matter left which is visible to the operator. Transparent soft matter may, it is true, become opaque immediately after the operation, before the first dressing, but this is liable to occur even in cases which have been washed out, and if the amount of soft matter left is small it always gets absorbed in time. Most ophthalmologists will agree that irrigation does not appreciably add to the risk of vitreous loss. The author lays stress on the details of the construction of the nozzle of the irrigator, preferring a lateral to a terminal slit. Though not so complicated as the original apparatus of McKeown, we believe that the one Colonel Newman describes is not so simple as it might be. All that is necessary is a beaker which can be raised or lowered by an assistant, a rubber tube and a nozzle curved at the end, all of which can easily be boiled. The risk is materially reduced if the operator holds between his thumb and forefinger not the nozzle itself but the rubber tube close to it; he can thus both direct the position of the nozzle and regulate the flow of fluid.

With regard to the book as a whole, it is a reliable guide for those who are content to practise extracapsular extraction with iridectomy. This is considered by some an old-fashioned operation, but we do not believe that it is likely to become obsolete in the near future.

HEALTH AND ENVIRONMENT IN ADOLESCENCE.

Konstitution und Umwelt im Lehrlingsalter. Von Prof. J. KAUP. Munchen: Lehmann. 1922. 3*s.* 9*d.*

THIS publication is the first of a series of books published in Munich on social hygiene. Particular stress is laid throughout upon the importance of anthropometric measurements made between the last two years of school life and the first two years of adolescent life when the youth is making choice of forms of trade. Variations as between the length, weight, and chest measurements in different trades are given both statistically and by means of graphs, also the various indices that have from time to time gained popularity in this or that country, such as those of Erismann, Pignet, Livi, Quetelet.

There is little in this book which will be of practical use to the school medical officer or the practitioner who has to deal with the health of the adolescent, but as a collection of definite measurements carried out with considerable care, this publication should be of interest to any anthropometrical society. Prof. G. Dreyer has pointed out, however, that little can be deduced from mere measurements of standing height or of weight or chest circumference, and they cannot be used to draw any hard-and-fast deduction. It was shown clearly during the war that the essence of suitable selection lay, not in taking mere body measurements, but in testing, so far as is possible, the working capacity of the various systems. No mention is made of the work of Dreyer, Martin Flack, or American researchers in this field. Although Prof. Kaup refers to Prof. Axel Key's work, he ignores the most significant fact shown by Prof. Key—namely, that the yearly rate of increase of growth in the child between the ages of 8 and 20 is one showing a double curve, more or less similar in form for all countries, more marked in the male than the female, with the lowest point of these curves coinciding with the average age for the onset of puberty. These are important facts and should surely be taken into consideration when any measurements, such as Prof. Kaup has collected, are published.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 4, 1922.

Physical and Psychical Factors in Disease.

THE weighty impetus given to the study of psychopathology by five years of warfare, with its limitless clinical material, is not yet dissipated. That permanent benefit has thereby accrued both to patient and physician cannot be gainsaid; clearer insight into the working of mental mechanisms has been followed by a surer therapeutic touch on the part of the latter and by corresponding satisfaction in respect of the former. Some at least of the mental mysteries of other times have become the commonplaces of to-day, but augmentation and popularisation of knowledge have their disadvantages. Repression, complex-formation, and the unconscious motive are now juggled with by "experts" both within and without the professional ranks, while patients themselves often evince a scarcely surprising familiarity with the psychological terminology of the moment. Literature, journalism, and the drama add their weekly quota to a mass from the incubus of which there seems no escaping. Survey of the present situation gives the observer an impression of a diversion of this current of thought and research in two opposite directions. Sighing for other worlds to conquer, the psychological extremist is, in the political jargon of the day, moving to the left, and claiming a psychological origin not merely for mental disease properly so called, but also for epilepsy, disseminated sclerosis, and other morbid states whose precincts have not hitherto been invaded to any extent by the apostles of emotion. In turn, realms supposedly sacred to the psychologist are being beset by the forces of the endocrinologist and the physiologist. Swayed by the pressure thus brought to bear, we find not a few supporters of psychological theory are now edging to the right, admitting the influence of mind on body to have been exaggerated, and willing to concede a greater rôle in the genesis of mental disorder to the agency of factors which cannot except by abuse of language be described as psychical. The centre party is represented by such authorities as Sir MAURICE CRAIG, who maintains in his Bradshaw Lecture, published on another page, that all physical diseases have a concomitant mental change, just as all mind disorder is associated with variations in the bodily functions.

Fundamental differences in the attitude of mind of the exponents of these diverging schools prevent any genuine reconciliation. In his brilliant address before the British Association this year Sir CHARLES SHERRINGTON has encroached further, from the physiological side, on the outworks of the psychological "die-hard" than many of his precedessors; the physiological habit of mind is not to be shaken, though the phenomena coming under observation seem in one sense to be of a different order from those produced by the neural activity, say, of the spinal cord. On the other hand, unconvinced by the objective study of neurosis, by investigation of endocrine and vegetative systems, by the psychical concomitants of structural disease, the true-blue psychologist sticks to his guns: emotional assault is the precursor of nervous disturbance; abnormal ideation modifies structure; the epileptic fit is the expression of an unconscious desire to retreat from reality to the sanctuary of the maternal uterus; with a normal vita sexualis no neurosis is possible. With this conflict of view, with the evidence before him—extremists' attitude aside—of flux in psychological opinion, where does the general practitioner stand? We commend to his notice Sir MAURICE CRAIG'S mature counsels, that safety lies in a via media, as always; the regular interaction of mind and body in health, proclaimed by proverbs as old as the human race, has its counterpart when one or other is diseased. If he has a bent for physical explanation, a bias in favour of materialistic interpretation, he will be impressed by the mental symptoms of toxæmias and toxi-infective states, by the changes in character and personality not infrequently seen in cases of cerebral tumour, by the loss of higher psychical qualities of the arteriopath and the organic dement; yet let him not seek in a visionary cell-change the basis of a mysophobia, in the mystery of a speculative biochemical defect the reality of an emotional shock. The physician, again, whose attitude of mind leads him to prefer psychical to physical ætiology, should beware of overlooking, as Sir MAURICE CRAIG instances by way of illustration, a collection of pus in a preoccupied concern with the patient's mental confusion and hallucinations. Delighted as he may legitimately be in tracing an anxiety neurosis to a forgotten incident of childhood, in replacing a maladaptation to the facts of life by a wiser and saner mental outlook, hours of misplaced psycho-analytic enthusiasm may be saved by a urinary test or a glance at the optic discs.

Fortunately, clinical wisdom and therapeutic skill do not entirely depend on ability to fathom the deep places of psycho-physical interaction. Whatever views the individual physician holds of the pathogenesis of diseased states, no prepossession in respect of theory will save him from his own condemnation should he fail to make his examinations as complete as practicable, or should he concentrate on one symptom or group of symptoms with which he is familiar to the exclusion of others which patient investigation would never have allowed him to miss.

The Menstrual Cycle.

IT is now regarded as certain that menstruation is dependent upon the presence and functional activity of the ovaries, but its exact relation to ovulation is still doubtful. Recent investigations on ovarian internal secretion tend to make the problem more complex rather than more simple. The mechanism of menstruation may indeed be under the control of a concert of internal secretions of various endocrine glands. The strict relation to ovulation would now be difficult to sustain, in view of the accumulating evidence that the whole metabolic activity of the woman follows a monthly curve which reaches its acme just before the appearance of the flow. Dr. C. CHISHOLM regards[1] the flow itself not as the culminating event in the cycle, but rather the result of the climax. Dr. R. W. JOHNSTONE, indeed, suggests[1] that there is some real truth in the ancient Mosaic view that menstruation is an excretory process, possibly designed to get rid of substances heaped up against the occurrence of pregnancy. This view falls in substantially with that of the Universitäts-Frauenklinik in Giessen, as set forth by Dr. A. SEITZ in an interesting paper[2] summarising the work of

[1] The Practitioner's Encyclopædia of Midwifery and the Diseases of Women. Oxford Medical Publications. 1921.
[2] Medizinische Klinik, August 6th, 1922, p. 1013.

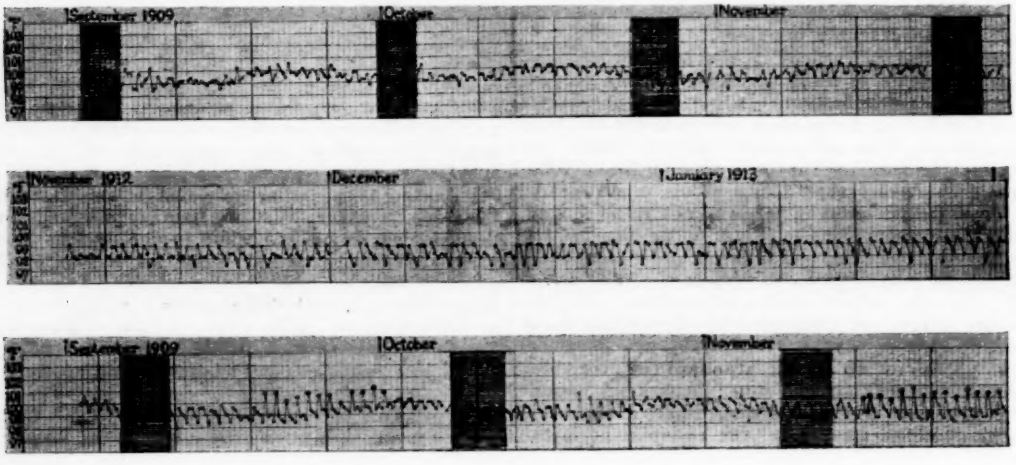
many years at this clinic. The function of the menstrual process is regarded as the preparation of the uterus to receive the ovum released at each follicular rupture, in case fertilisation should result, the actual hæmorrhage having only the significance of an accidental occurrence. The *Beherrscherin des menstruellen Zyklus* is the ovum itself, its growth, its life, and death. Dr. SEITZ assumes the doctrine of the *Wellenbewegung* in the life of the sexually active woman, with its oscillations of blood pressure, of muscular tension, and of intensity of metabolism associated with variations in the tone of vagus and sympathetic. Variations in the quality of the blood were frequent but less constant than other factors in the rhythm.

We publish in the present issue of THE LANCET a series of articles dealing with observations on the menstrual cycle. Prof. WINIFRED CULLIS and her co-workers in the Physiology Department of the London School of Medicine for Women examined a selected group of women medical students, who accepted the no mean task of keeping daily records of their own temperature, pulse, and blood pressure. The variations of temperature were found to be very constant, with a maximum value in the pre-menstrual phase and a minimum during the flow. The figures for mean pulse-frequency also showed rhythmic variations not quite coinciding with those of temperature, and Miss MURIEL BOND, from the same department, found a definite rise of the ammonia coefficient in the pre-menstrual period. No definite variations were noted in the blood-pressure values. On the other hand, Dr. S. E. AMOS, whose observations we also publish, found a decided menstrual rhythm fall of blood pressure in convalescent women patients undergoing sanatorium treatment. In commenting upon the small amount of material available Prof. CULLIS points out that sanatoria would seem to offer a useful field for obtaining such data, since patients live therein under great regularity as regards external conditions. There must be a mass of unpublished temperature observations available. We reproduce below three charts, each over a period of three months, of patients undergoing sanatorium régime, which excited some interest at a recent meeting of the Physiological Society. The upper and lower charts are of female patients, the period of menstrual flow being indicated by shading. The third chart is that of a male patient for the sake of comparison. The female charts both show a characteristic curve of which the individual features are repeated with painstaking accuracy from month to month. The curves are not imaginative, for the observations were rectal measurements taken by a nurse and entered in a book, the figures being charted only long after the event. There is nothing new in these observations, which followed naturally on J. GOODMAN'S cyclical theory[3] of menstruation, an explicit account of the variations having been given[4] by Dr. A. E. GILES as long ago as 1897. Dr. GILES stated that the temperature began to rise about the middle of the inter-menstrual period, attaining its maximum two days before the flow, with a sudden drop on the day before the flow begins. The total variation he found to amount only to half a degree Fahrenheit. Measured rectally the variation is frequently much larger than this in apparently afebrile sanatorium patients. Dr. K. TURBAN, of Davos, described[5] in 1899 the principal varieties of pre-menstrual, menstrual, and post-menstrual fever in phthisis, with a note on their prognostic significance. The most frequent type, 73 per cent., was pre-menstrual, the rise occurring at a time varying from some hours to 14 days before the onset of the menses. This form, he admitted, was simply an exaggeration of the *Lebenswelle* or temperature curve of the normal healthy woman, had no baleful significance, and generally lasted on into convalescence. Post-menstrual fever, however, he regarded as the expression of an exacerbation of lung trouble occurring during the period and almost always of bad import; subsequent clinicians have confirmed this observation. G. CORNET (Berlin) similarly alluded[6] to the occurrence of pre-menstrual rise of temperature in two-thirds of cases of tuberculous disease in the female. FRANCK (Berlin), who was one of the early observers of pre-menstrual rise, thought that it could only be seen in rectal measurements, but this is evidently not so, for all TURBAN'S observations were readings taken for ten minutes in the mouth.

It may, in fact, be regarded as sufficiently established that a woman during the period of sexual activity has no normal temperature, but that the thermometric reading depends upon the particular stage of the

[3] American Journal of Obstetrics, N.Y., 1878, xi.
[4] The Cyclical or Wave Theory of Menstruation, with Observations of Variations in Pulse and Temperature in Relation to Menstruation. Obstetrical Transactions, 1897, xxxix.
[5] Beiträge zur Kenntniss der Lungentuberkulose. Wiesbaden.
[6] Die Tuberkulose. Wien. 1907.

TWO TEMPERATURE CHARTS SHOWING THE MENSTRUAL CYCLE.
(A Comparable Chart in a Male is interpolated.)



menstrual period during which the observation is taken. It is a curious reflection upon the exactitude of hospital ward records that no nursing sister can be persuaded to admit the truth of this fact. If the pre-menstrual rise can rightly be construed as a result of the metabolic processes preparing the uterus for the reception of the ovum, it might reasonably be supposed that the summit of this rise becomes the normal line for the woman in whom, the ovum being impregnated, the menstrual cycle is arrested. This higher base-line temperature, with its associated higher basal metabolism, might be the explanation of the increased sense of well-being and indeed the obvious improvement in health of many women during the earlier months of pregnancy. Conversely, the post-menstrual base-line becomes that of the woman at the climacteric. Observation at the beginning and end of sexual life would be of special interest. Dr. STANLEY ROSS BURLAGE, of Cornell Medical College, has recently made a study[7] of the blood pressure and heart-rate in girls during adolescence, his data being obtained from over 800 girls in the public schools of Ithaca, N.Y., whose ages ranged from 9 to 16 years and from an equal number of young women of Cornell University from 16 to 26 years old. Blood pressures were taken in the sitting posture. Dr. BURLAGE found a rise in systolic pressure from 104 to 124 mm. up to 14 years of age. The pressure then remained approximately at the same level through the next year, with a fall of over 10 mm. to a minimum at 18 years. From that age on, blood pressure remained nearly constant round about 111 mm. up to 26 years. Pulse-rate dropped from 98 at 9 years to 80 at 18 years, then continuing with little change. At 14 years of age practically all these girls had begun to menstruate, and allowing three or four years for recovery from disturbances incident to the onset of puberty the figures for blood pressure and pulse-rate show little variation during adolescence. We await with interest the results of similar observations at the menopause.

The Life-Table—"Expectation of Life."

FOR several decades Dr. FARR and his successors in the General Register Office have published life-tables dealing with national experience, and with the experience of special groups of the population of England and Wales, in successive decennial periods. For the decennium 1901–10, and the years 1910–12, life-tables prepared by Mr. GEORGE KING, F.I.A., have been published, as well as special local life-tables prepared by Dr. SNOW. Dr. BROWNLEE also has published life-tables prepared by a special short method of his own. The Bureau of the Census at Washington, with a promptitude which may be commended to the notice of our more leisurely General Register Office, has issued life-tables for the Original Registration States dealing with the experience of the year 1920. It may be assumed, therefore, that life-tables are regarded in these various quarters as having some definite value, and as furnishing information which repays for the tedious work involved in the construction of a life-table. And yet, if we are to accept the first impression derived from a recent discussion at the Royal Statistical Society on "The Value of Life-tables in Statistical Research," the value of this method of measurement of life-prospects has been gravely exaggerated, and the method can furnish us with little information beyond what is given by death-rates for different age-periods in each sex, or by these massed into a single standardised death-rate, in which arithmetical allowance has been made for variations in the age and sex distribution of the populations which are under comparison. Thus Mr. A. HENRY, F.I.A., considered the "expectation of life" as not only a horrible term, but as having no practical meaning. He agreed that something in the nature of a composite picture of death-rates at different ages might be desirable, but preferred a statement of the probability of living five to ten years, a method of statement which might eliminate accidental errors. Dr. T. H. C. STEVENSON, in the same discussion, appears to us to have summarised accurately the gist of the whole matter in expressing the view that the study of a satisfactory life-table relating to any population was bound to throw added light on its vital conditions. As he stated, after all, the life-table merely provides an expression in convenient summary form of the effects of the age-group death-rates from which it was derived. The divergent views expressed by Dr. M. GREENWOOD and others in the discussion referred to will be better understood in the light of a brief statement of the nature of a life-table.

The theoretically perfect life-table would start with, say, a million males and females at birth, and set down the number of survivors at each successive year of life until the million was extinct. In practice this cannot be done, and the experience thus obtained would in any case be obsolete before it was available. This method is, however, adopted in life-insurance experience, insured persons being watched until they die; and the summarised English and American actuarial life-tables are based on information thus obtained. For national purposes the average annual death-rate, say in 1911–20, is calculated for each age. Thus the deaths out of a million born in the first year of life being known, the survivors are easily calculated, and so on for each year of life. The number of years lived from a given age to the end of life is the added sum of all the survivors at that and every successive age; and if this sum is divided by the number of persons living at the given age taken, the "expectation of life" at that age is obtained. Thus in the English life-table (No. 8, Males) out of a million at birth 778,699 are surviving at the age of 25. This number are found to live in the aggregate 31,150,043 years, based on the death-rates holding good in the three years 1910–12. The expectation of life at age 25, therefore, was 31,150,043 divided by 778,699, which is 40·0 years. The expectation of life at any age thus obtained sums up for the period concerned the experience of the remaining years of life above the age in question. It enables us to forecast the future, on the assumption that the death-rates for the period investigated will continue to hold good. If they do not hold good, the expectation of life is no more misleading than would be a statement of the standardised death-rate for 1910–12 or of the death-rates at different ages, from which such a standardised death-rate and the expectation of life are equally derived. It is therefore a question of relatively small importance whether the standardised death-rate or the expectation of life is employed to give the relative vital status of a community. Both standardised death-rate and expectation of life at birth summarise accurately the experience of persons of both sexes and at all ages during the period investigated in a given community. Both give a bird's-eye view of the total experience of this community. Neither of them shows the detail for each age-period and for the two sexes; and often-times and for many purposes to know this detail is more important than to have a composite picture of the whole. The death-rates at ages are the fundamental thing, and it is by them that we can best ascertain from year to year and for longer periods what changes at each age-period the death-rate is undergoing, and where preventive medicine is least and is most successful. Reference has been made above to standardised death-rates as giving, for non-insurance purposes, what is needed by way of a summarised statement for public health needs. In obtaining such "standardised" death-rates correction is made for the fact that the "crude" death-rates of two districts represent death-rates which may be based on populations having an unequal

[7] Proc. Soc. for Biol. and Medicine, 1922, xix.

proportion of their total population living at ages of high or of low death-rate. An arithmetical correction will eliminate arithmetical error.

The matter may be thus summarised. The life-table is required conveniently to calculate annuity and like tables for insurance purposes. For public health purposes life-tables for successive periods in national or local history give convenient data (number of survivors, expectation of life, probability of living one or more years) for comparison between one period and another and between one community and another. But accurately determined death-rates at different age-periods give more detailed and equally accurate information, and the standardised death-rate for all ages is as good an index of the vitality of a community as is the expectation of life at birth. Life-tables of fair degree of accuracy are now easily constructed by the short processes described by Mr. KING, Dr. SNOW, and Dr. BROWNLEE; but notwithstanding this it is unlikely that they will largely be used for public health purposes, in view of the equally accurate information available without them.

MEDICAL MEN IN PARLIAMENT.

WE publish in another column the names of certain medical men whose definite intention to seek the suffrages of a constituency at the coming General Election has been signified to us. We are aware that the list of intending candidates is not a complete one, and beg that other medical practitioners with Parliamentary ambition may inform us of the position. It will be observed that the list of candidates is already longer than any that has been forthcoming at a previous election, and we regard with satisfaction this practical proof that representatives of our science and art are desirous of assisting legislation in confirming or reforming enactments which maintain the public health. Sir Sydney Russell-Wells, who is standing for the University of London, and Dr. H. B. Brackenbury, who is approaching the voters of East Walthamstow, are officially supported by the British Medical Association through their Parliamentary Elections Committee. The Federation of Medical and Allied Services, in pursuance of a policy of supporting approved candidates for Parliament, irrespective of their political party, whose return is likely to be in the health interests of the community, is forwarding the interests of the following: Sir Sydney Russell-Wells (London Univ.), Sir George Berry (Scottish Univs.), Sir John Collie (Partick Div., Glasgow), Rt. Hon. C. Addison (Shoreditch), Lieut.-Colonel F. E. Fremantle (St. Albans), Captain W. E. Elliot (Lanark), Dr. W. A. Chapple (Dumfries), Major J. E. Molson (Gainsborough), Sir William Whitla (Queen's Univ., Belfast), Dr. L. Haden Guest (North Southwark), Dr. E. H. M. Stancomb (Southampton), Dr. B. F. P. McDonald (Wallasey), Mr. Somerville Hastings (Epsom), and Dr. Donald Murray (Western Isles). The Federation is also supporting a group of nine candidates, lay fellows of the Association, whose interest in questions affecting national health is well known. This group includes Sir Henry Craik, Lord Elveden, Viscount Curzon, Mr. Henry Lesser, and Captain T. C. Worsfold. There is said to be something in their turn of mind which prevents medical men from being good politicians, but it is clear that, if medicine were more abundantly represented in Parliament, our legislators are more likely to be concerned with the health of the nation, and less likely to neglect indications for sanitary interference. Vocational representation in Parliament is dangerous; that we can all see, for when the points at issue lie between communal and sectional needs the vocational representative may cease to be a statesman in order to become an advocate. We should tremble for the country whose fate rested too much in the hands of doctors, lawyers, editors, journalists, or miners, but there ought to be in the House of Commons representatives of these important sections who are able on the one hand to contribute their particular information and on the other to explain the collective views of their calling to the rest of the House. Many lawyers have seats, but few doctors.

Annotations.

"Ne quid nimis."

THE PHYSICIANS' CODE.

IMPORTANT changes in the by-laws of the Royal College of Physicians of London relating to Members and the examination for the Membership have been made at the last two meetings of the Comitia. These have been published in last week's issue of THE LANCET and in the current number in our reports of the proceedings of the Comitia at its meetings on Oct. 19th and 26th respectively. The most important aspect of these changes is the repeal of By-law CXIV., by which candidates for the Membership were required not to be engaged in trade, not to dispense medicines, or make any arrangement with a chemist or any other person for the supply of medicines, and not to practise medicine or surgery in partnership. By-law CLXXVIII., which formerly applied both to Fellows and Members, imposed similar restrictions and in addition prevented Fellows and Members from being party to the transfer of patients or of the goodwill of a practice to or from themselves for a pecuniary consideration. This by-law has been altered so as to exclude Members from its operation, though the restrictions still apply without modification to Fellows. These changes are of interest not only to candidates for the Membership, but also to Members, and especially to past Members, who have resigned their Membership on going into partnership. The alteration of By-law CLXXVIII. will presumably enable the last-mentioned to apply for restoration of the Membership. A further noteworthy change is made affecting both Fellows and Members, concerning their relationship to any company or institution having for its object the treatment of disease for profit. By a resolution passed on Oct. 25th, 1888, it was declared to be undesirable that any Fellow or Member should be officially connected with any such company. The resolution substituted for this at the Comitia of Oct. 19th last was given in extenso in last week's issue of THE LANCET. It will be seen that it permits the receipt from such a company or institution of either a reasonable fixed salary or fees on an adequate scale for services rendered in the capacity of medical practitioner, any other financial interest in its operations, either direct or indirect, being declared undesirable. In view of the recent discussions and suggestions in regard to group practice or combinations of medical men for diagnosis and treatment of disease, these changes are of special importance and interest.

BIOMETRICS AND BLOOD CORPUSCLES.

IT has taken the ordinary laboratory worker in the medical sciences a long time to realise that out of the austere mysteries of Prof. Karl Pearson's mathematics there may emerge, in simple arithmetic, some of the most useful tools which he has at his disposal. Whether the author of these methods of analysis would altogether approve of their use by people who do not understand the fundamental bases on which they rest is open to some question. But a man may profitably use a watch without any acquaintance with either astronomy or its particular mechanism, and it seems likely that the failure to gather adherents to the new faith more quickly may in part have been due to imperfections which occasionally and naturally followed the analysis of data by persons who were not adequately acquainted with the technical details of their accumulation. And now the persistent advocacy and example of Dr. M. Greenwood, Mr. Udny Yule, and others is bearing fruit, and papers in which statistical methods of analysis are at least attempted are becoming almost a commonplace of medical and pathological journals, especially in America. We recently published (THE LANCET, 1922, i., 369) an interesting example of the applica-

tion of the method of correlation to the interpretation of analyses of urine by Dr. C. Powell White, and in the current number of the *Journal of Pathology and Bacteriology* Dr. Price Jones shows how Pearson's methods may be used to elucidate the changes in size which, as is well known, are found in the red blood corpuscles in pernicious anæmia and in anæmia from hæmorrhage. It is an axiomatic proposition that all live things and all parts and qualities of live things which are capable of measurement vary according to the normal curve of variation. Normal blood corpuscles are no exception to this rule, and if a sample of such cells be measured it is found that their sizes are compatible with their being essentially all of one kind. Cells from cases of pernicious anæmia are on the average larger than normal, and include individuals which are both too large and too small. The variability is thus considerably greater than in health, and if the distribution of the sizes is analysed by Pearson's method it is found to be quite inconsistent with the hypothesis that the blood corpuscles form a homogeneous population. Evidently, therefore, the characters of the red corpuscles in pernicious anæmia are in part due to a mixture of different kinds of red cells, or to the erythroblastic tissue taking on an entirely abnormal method of growth. Similarly in anæmia from hæmorrhage, in which the average diameter of the red cells is less than normal, there is evidence in some cases of a heterogeneous mixture of newly generated small cells with a residuum of normal corpuscles, while in others the whole population may be regarded as a homogeneous group of regenerated corpuscles. In this instance, at any rate, it is difficult to see how this fresh information could have been obtained except by statistical analysis.

THYMIC DEATH FOLLOWING AN ATTACK OF HYSTERIA.

IN the *Revue de Médecine* (Nos. 8–9, 1922) there is a paper by Dr. A. Pulawski, who records a case of considerable medico-legal interest. During the night of Nov. 28th, 1920, a woman, aged 29, was admitted to his hospital in an unconscious condition. Her fiancé, a medical man, suggested that she was suffering from morphine poisoning, but it subsequently transpired that he regarded the case as one of hysteria only, and his suggestion of morphine poisoning was prompted by the wish to get her into hospital, and by the knowledge that hospitals do not readily open their wards merely for the relief of hysteria. There was a history of similar attacks associated with loss of consciousness and stiffness of the whole body, followed by profound sleep, which often lasted 24 hours. During these attacks there were respiratory symptoms such as suffocation and cyanosis. As a rule, the attacks were provoked by fits of ill-temper. On this occasion the attack had followed a quarrel with her fiancé, and as the attack was more serious than usual, he desired her admission to hospital. Here the diagnosis of morphine poisoning was at first taken for granted, the stomach was washed out, and artificial respiration was supplemented by the injection of atropine, camphor, and caffeine. Little improvement was observed, and when she was seen by Dr. Pulawski next morning she was still unconscious, the pulse was feeble, the face cyanosed, and the respiration irregular, the irregularity being rather of the hysterical than of the Cheyne-Stokes type. The diagnosis of morphine poisoning was challenged when the pupils were found to be somewhat dilated and to react promptly to light. Occasionally she uttered a strident cry, turning her head round and back. Digital compression of the left breast started severe muscular twitchings, as did also the faradic current. This restored her to consciousness, she sat up, opened her eyes, and spoke a few words. A little later she again lost consciousness, adopting the posture described by Charcot as "attitudes passionnelles." Then she fell asleep, the respiration becoming regular and the pulse almost normal. All now seemed well, but when Dr. Pulawski saw her again three hours later she was dying, her respiration and pulse having been perfectly regular up to the moment of her death. This occurred during sleep, without any convulsions. The necropsy showed hypertrophy of the thymus, which contained a great number of Hassall's corpuscles. The mesenteric glands and the follicles of the small intestines showed hyperplasia, which was also exhibited by the medulla of the suprarenal bodies. The left side of the brain was hypertrophied, as shown by the flattening of the gyri. The uterus was in the menstrual state, there were hæmorrhages in the left ovary, and the lungs were hyperæmic. Nests of lymphocytes were found in the liver, and there was hyperplasia of the connective tissue in the right half of the pituitary body. Thus, the necropsy showed the typical picture of status thymico-lymphaticus. Death during an attack of hysteria is not unknown, but in correlating such a death with status thymico-lymphaticus, Dr. Pulawski has thrown light on a problem which has hitherto been obscure.

DEMONIACAL POSSESSION AND THE UNCONSCIOUS MIND.

IN the issues of THE LANCET for Sept. 16th and Oct. 21st there appeared letters from Dr. E. W. Scripture and Dr. W. J. Rutherfurd respectively dealing with the subjects of death in the Alps and of demoniacal possession. Dr. Scripture asserted that deaths from falling over a precipice were due, in many cases, not to accident or purposeful action, but to an unconscious impulse to commit suicide, and that sometimes, as in a case which he quoted from Flournoy, such unconscious impulses execute themselves during sleep. He quoted another case from W. Stekel where a climber was seized with a desire to throw himself over a precipice, a desire which he overcame, describing his condition afterwards as "a struggle between two impulses, one to throw himself down and the other not to do so." Dr. Scripture further said that in cases where these "accidents" occur during sleep "the unconscious mind wished to get the opportunity of carrying out its plan while a consciousness was dormant." Dr. Rutherfurd dubs this teaching, "the old doctrine of demoniacal possession revived, naked and unashamed," and Dr. Scripture, in a further communication which we have received from him, says in answer to Dr. Rutherfurd: "I am quite ready to confess that . . . . I support the old doctrine of demoniacal possession, naked and unashamed." Demoniacal possession is one of the oldest of human beliefs, and without entering into vexed theological questions we see nothing inconsistent with science in believing that there are, outside human ken in the spiritual or psychological plane, energies of which we have but a dim knowledge, just as in the physical plane we are only beginning to comprehend such matters as wireless electrical waves, atomic energy, or the constitution of space. Some persons are more sensitive than others to these spiritual influences, but occasionally most of us have experienced them. Why is it, for instance, that certain persons give us an indefinable feeling of exuding or being surrounded by an atmosphere of evil? Why do certain books—we could name at least one, but refrain—give the impression of having been written or inspired by a fiend? Why in the long history of humanity are there so many records of desperate fights against evil impulses—impulses which come not only to those who would be ordinarily called wicked, but to men of the highest spiritual culture? If these be due to the "unconscious mind," what is that same unconscious mind? It is, as Dr. M. Culpin suggested last week, a question of definition. "The good that I would I do not, but the evil that I would not, that I do," said the Apostle Paul, and we have all had such experiences. There are plenty of examples of such in the lives of the saints, and allowing for exaggeration there is deep truth in them. In modern literature, albeit in a

work of fiction, we need only refer to Mr. Somerset Maugham's grim story "Mackintosh," where such a condition is admirably described. Mackintosh was anxious to kill a man, by name Walker, or shall we rather say, that such a man should be killed. An enemy of Walker, a Polynesian native, came to see Mackintosh for some medicine, and saw a revolver lying on the table. Mackintosh saw that he saw it, and went out of the room; "it was this other person that possessed him that drove him out of the room, but it was himself that took a handful of muddled papers and threw them on the revolver in order to hide it from view." When he came back he did not dare to look to see whether the revolver was there, but that night Walker was shot and next morning the revolver was back on the table with four empty chambers. To many people lonely places, the desert or mountain, seem particularly favourable environments for the attacks of the unconscious mind or evil spiritual influences, whichever they may be called. To others, as Dean Inge says in his second series of "Outspoken Essays," [1] snow-peaks and glaciers open "avenues of communication with the *magnalia Dei* which are less easy to maintain amid the dark and grimy surroundings" of a London home. Physical conditions are, however, not to be put on one side altogether, and it may be that the abnormally receptive condition of the mind might, in the visions of the devil which came, say, to St. Dunstan and Luther, have been dissipated by a dose of calomel. But for all that demoniacal possession or obsession is not a matter which either physician of soul or of body can afford to put on one side as superstition.

PROTECTIVE GLASSES FOR METAL-WORKERS.

THE fact needs wider recognition that the great majority of accidents which happen to the eyes happen to metal-workers working with eyes unprotected, and that they could easily have been prevented by the simple expedient of wearing goggles. Dr. van Kirk, of Pittsburgh, reports that in a steel mill employing about 8000 men the vision of one or both eyes has been saved in from 20 to 25 cases a year by the use of goggles, and that this alone saves the company about $50,000 or $60,000 a year in compensation.[2] As was to be expected, it took some time to obtain the coöperation of the men, but now they realise the value of goggles as a protection, and the penalty of discharge for failure to wear them when so ordered is rarely necessary. There is no more impressive proof of their efficacy than the demonstration of a pair of goggles cracked by a splinter which otherwise would have inevitably injured, and possibly destroyed, the eye of the wearer. The injuries that occur from this cause may be divided into two classes: First, those in which the foreign body actually penetrates into the globe and lies either in the anterior chamber, the lens, or the vitreous. These are all serious, and the great majority of cases where the foreign bodies penetrate into the vitreous, even if the particle itself is successfully removed, end with the total loss of sight in the affected eye. In the second class of cases, which includes the vast majority, penetration of the globe does not occur and the splinter lies either in the conjunctival sac or in the cornea. In these cases it is a good rule to make that unless the splinter can be removed by the use of a soft pledget of cotton-wool—i.e., in all cases in which it is embedded in the cornea—the case should be from the earliest possible moment under the care of a specialist. The great danger of these cases lies in the frequency with which, owing to lack of efficient treatment, a spreading corneal ulcer arises after the apparently successful extraction of the foreign body. In the steel mill already referred to the number of corneal ulcers developing after these injuries was reduced after the introduction of the system of prompt treatment by a specialist to about one-quarter of what it had been, and in each of seven cases in which an ulcer did develop the occurrence could be traced either to a lack of promptitude in seeking treatment or a failure to carry it out when given. The most frequent source of infection is a diseased lacrymal sac, but in any case the eye should be protected and kept under observation until the injured epithelium of the cornea has re-formed, as shown by its no longer staining with fluorescein. In the majority of cases it will not be necessary to occlude the eye for more than 24 hours, whereas if an ulcer is allowed to form the treatment may last for weeks and the vision may be permanently impaired or even, in bad cases, lost.

[1] Longmans, Green and Co. 1922.

[2] Journal of the American Medical Association, Sept. 16th, 1922.

RURAL ENDEMIC TYPHOID FEVER.

EPIDEMIOLOGICAL workers familiar with Dr. Ralph Johnstone's report to the Local Government Board, in which he traced a series of typhoid cases in a hamlet to a chronic carrier, will be interested in a valuable study of the same subject by Dr. Norment, of the United States Public Health Service, which appeared in the *Public Health Reports* (Washington) for Sept. 1st, 1922. These relate to two counties in the State of Maryland which were made the subject of intensive study. Spot maps giving the incidence of typhoid cases in four consecutive years showed some striking features in the distribution of the cases. In certain areas decided clumping of cases was noted, and this was found to be due, in several instances, to the occurrence of cases year after year, indicating chronic endemic conditions rather than transient epidemic conditions. Careful case histories were obtained, including contact histories, for 63 cases of rural typhoid in nine months of 1920; 57 of these cases appeared to have originated locally, and of this number 32 gave a history of contact with specifically located sources—viz., either demonstrated carriers or unrecognised clinical cases. The general importance of investigations of the kind indicated above is insufficiently recognised. More careful case histories and field study would probably demonstrate many of these specific connexions with previous cases. The advantage of such inquiries and of the action taken on the findings is that it can secure a readier and quicker and, furthermore, a more complete result in reduction of disease than can be hoped from the mere pursuit of remedial measures against local insanitation.

THE VALUE OF ALBEE'S OPERATION FOR TUBERCULOUS SPINE.

WITH the exception of those complicated by fistulæ, phthisis, or paralysis, all cases of tuberculous spine admitted to the clinic of Dr. H. Görres at Heidelberg are treated by Albee's operation. In reporting on 120 cases subjected to this operation, he states[1] that immobilisation in bed for three to four months after the operation was the rule, and although in the early days a plaster jacket was worn for a further 18 months, recent experience has shown that it is safe for the patient to get up without support, and to return to work without any jacket. Of the first 60 cases, 3 died in the first year after operation, and 8 could not be traced. Of the remaining 49, 42 were well and working, and of these 29 were operated on more than three years previously and therefore could be regarded as permanent cures. From the re-examination of all the cases, it was demonstrated that the implanted bone produced neither limitation of growth nor diminution in the movements. It is true that the bridged-over portion was completely stiff, but the general movements of the spine were scarcely affected. Children grew apparently normally in height. The kyphosis remained, but cases operated on before kyphosis had appeared showed no bending of the spine, suggesting that kyphosis may be prevented by the operation.

[1] Deut. med. Woch., June 30th, 1922.

Early cases, with little or no kyphosis, are the most favourable for the operation, and abscess formation seems to be beneficially influenced. In the early days Dr. Görres only operated on children, but latterly he has been operating on adults with encouraging results. He maintains that Albee's operation is the treatment of choice, rendering long after-treatment in plaster jackets unnecessary, and that in most cases a permanent cure may be expected in four to five months after the operation.

PREVENTIVE DENTISTRY.

EVEN when the pathology of a disease is reasonably certain, the prevention of that disease depends on so many considerations, social, economic, and financial, that the path of the hygienist is a peculiarly difficult one and his progress must be slow. Preventive dentistry, like preventive medicine, is necessarily dependent on a sound pathology of dental disease; until this is achieved any efforts must inevitably be empirical and incomplete. Preventive dentistry is still in an embryonic stage, and Mr. W. R. Ackland, in his presidential address to the Odontological Section of the Royal Society of Medicine on this difficult subject, was unable to formulate any very precise code for general adoption. He laid stress on the general factors of nature and nurture in the production of dental disease, especially of pyorrhœa, rather than on the local factors. The ætiology of pyorrhœa has always been keenly debated, but of late years the protagonists of a local origin of that disease have been in the ascendant. While general conditions doubtless influence pyorrhœa, its widespread incidence, its independence of social conditions, and its occurrence at all periods of life, make it difficult to imagine that an absence of the antiscorbutic vitamin can be mainly reponsible, as Mr. Ackland maintains. The possibility of a dietetic element in the production of the acute stomatitis so prevalent in the late war is a different matter, and though difficult to prove may have an element of truth. The same disease was noted by a French observer as common among the troops in the Napoleonic wars, when tinned foods were unknown, but the antiscorbutic elements in the diet may yet have been inadequate. Racial degeneration, using the term to connote only a *physical* inferiority to more primitive types of man, has often been invoked as a predisposing factor in the production of pyorrhœa. The alveolar process, being an end-organ, is especially liable to be affected by systemic conditions, the more so as the masticatory apparatus is steadily losing its functional efficiency, and, as Sir Arthur Keith has shown, is undergoing a change in shape. Mr. Ackland touched on this aspect, and pointed a regretful contrast between the "natural" life of primitive man, who escaped so many dental ills, and that of his civilised and degenerate successor. Yet even assuming this hypothesis of the causation of pyorrhœa to be true, and it is a big and dubious assumption, it offers but small hope to preventive dentistry. Dental caries offers a more encouraging prospect—at least, we know more of its ætiology—and it is possible to frame the principles of prevention along relatively simple lines which are still compatible with our civilisation, imperfect and irrational though it may be. The work of Sim Wallace, based on experiment, seems in accord with our knowledge of the pathology of dental caries. Given that the disease is due to the fermentation of carbohydrate food in contact with the teeth, it follows that if the lodgment of such food between the teeth could be controlled, the incidence of dental caries should be diminished. In this respect foodstuffs differ in their detergent properties as apart from their nutritive qualities; the dietary should be so arranged that while fulfilling all the requirements of the physiologist, it should include a sufficiency of detergent foodstuffs. Furthermore, in order to allow the self-cleansing action of the mouth its fullest effect, the meals should be so arranged that there is a proper interval between the last meal and going to bed, since during slumber the activities of the tongue, lips, and salivary glands are largely in abeyance, thus allowing food in contact with the teeth to remain undisturbed. Experience has shown that these rules, though not completely effective, are certainly beneficial in lessening the incidence of dental caries. The experimental work of McIntosh, James, and Barlow on the bacteriology of dental caries does not as yet offer any weapon to the dental hygienist, but the evidence which supports their conclusions affords a hope that light may soon be thrown on the oral conditions which favour or antagonise the production of dental caries. There remains one consolatory feature of the problem to which Dr. A. E. Carver in our present issue draws attention—that the public are more alive than formerly to the benefits of such preventive dentistry as is implied by a periodical visit for inspection. This might be described on the analogy of V.D. terminology as early rather than preventive treatment, but we cannot guard against a disease the ætiology of which is obscure in any more logical way. Reference to Dr. Carver's address impels us to recommend its perusal to all our readers, as a moderate but forceful appeal to mutual understanding between the public and the medical profession.

CANCER RESEARCH IN GENERAL PRACTICE.

IT is not uncommon for consultants and hospital teachers to assure general practitioners that they enjoy unrivalled opportunities for the study of disease. Theirs is the privilege of being able to follow many patients from the cradle to the grave and to compile a family history of disease, following it from one generation to another, and observing its incidence in several members of the same generation. An illuminating example of this form of research is to be found in a recent paper by Dr. K. Isager,[1] who, when he settled down to practice in 1892 in a country district in Denmark, set himself the task of making copious notes of his cases, not realising at the time the purpose or purposes they might ultimately fulfil. Thirty years later he took stock of his material, which included practically all the deaths from malignant disease in his district, and his analysis of his material is of value both for the immediate information it yields, and for the stimulus it gives to future research on the same lines. Among his 120 cases of fatal cancer there were 116 in which there could be no doubt as to the correctness of the diagnosis. Seventy of these patients had been under his observation before the cancer developed, and among these cases rheumatism, neuralgia, and dyspepsia figured prominently. It was characteristic of the 46 patients, who had not been under medical observation before the outbreak of malignant disease, that they had been fit for work and leading active lives. On the other hand, it was noticed that patients with disease of the heart, emphysema, chronic bronchitis, bronchiectasis, hypertrophy of the prostate, and slight forms of apoplexy were singularly immune to cancer, although they had reached the cancer age. Dr. Isager was also struck by the comparative benignity of cancer when it was associated with tuberculosis; the tuberculosis was always the first to appear, and among the seven cases in which the two diseases occurred in the same person, there were as many as four who recovered after operative or X ray treatment. Another curious observation was the frequency with which cancer developed shortly after an accident associated with a considerable degree of shock, although the cancer did not necessarily develop in the organ directly injured by the accident. There were at least eight such cases, in some of which the shock lasted several days after the accident. It is also remarkable that in seven of these eight cases the digestive system, notably the lower part of the gut, proved to be the seat of the malignant disease. It is, of course, conceivable, when the interval between severe shock and the diagnosis of cancer is only half a year, as in three of Dr. Isager's cases, that the malignant disease may have

[1] Hospitalstidende, July 26th and August 2nd, 1922.

begun before the accident which gave rise to shock, but the possible connexion between the two is worth bearing in mind from a scientific, as well as from the medico-legal point of view.

THE EFFECT OF DIET ON MILK SECRETION.

IT is a matter for regret that so little information is at present available regarding the conditions which modify the rate and quality of milk secretion in the human subject. This applies in particular to the problems of the ideal food for nursing mothers. As a rough-and-ready hypothesis it might be assumed that a diet of milk would be that best suited to the production of milk. Since the composition of the milk produced is very different from that consumed (when cow's milk is in question), the assumption would seem to be of about the same order as that familiar one, that red wine generates blood because it is of a similar colour. Milk is a good food for all and sundry, and there seems little beyond this to say in its favour as a food for nursing mothers. There is no evidence that any of the specific constituents of milk could be conveyed direct from the food to the blood, and thence to the secreted milk of the mother.

The *lactose* of milk is formed from the glucose of the blood, and this glucose can be supplied by any carbohydrate food: the milk-sugar is synthesised from the blood-sugar in the mammary gland itself. Within limits, too, blood-sugar can be produced just as readily in the body from protein foods, though this is not physiologically economical. This explains the constant lactose content of milk, irrespective of the diet, or even during starvation, the source in the latter case being the mother's own tissue proteins. The *caseinogen* (and any other protein perhaps) of milk is also synthesised direct from the amino-acids of the circulating blood; these amino-acids can be supplied from the digestion of any liberal protein diet, and there can be no question of a short cut in the metabolism when the proteins of the food consist of milk proteins only, for these must be broken down to amino-acids and the whole process of disintegration and re-synthesis gone through, just as with any other proteins. We recognise the necessity for this when we recollect that there are not only serological, but physical and chemical differences between the caseinogens from the milks of different animal species. Dairy experts believe, probably with some reason, that the supply of milk, in its relation to diet, is conditioned by the protein more than by any other constituent of the food. They believe that when protein is supplied in amount beyond that required to preserve nutritive equilibrium, the lactating animal will put part of the surplus into increased milk yield. On the other hand, in experimental rats it has been found that great excess of protein in the maternal diet leads to convulsive seizures in the young. There is no doubt, however, that when the protein intake is below a certain minimum the milk yield is reduced. It must be borne in mind that quality of protein is as important as quantity. Caseinogen contains a great variety of amino-acids, such as can only be supplied by a rich protein diet, or by milk diet. For the poorer classes there would be less risk of a deficiency of amino-acids on a milk diet than perhaps on many another. The *fat* of milk, according to some of the most recent work, is derived, not from fat, but from the phosphatides of the blood plasma; these are altered by the mammary gland with production of fat and phosphates. Increase of the fat of the diet beyond the normal requirement has no pronounced effect on either the volume or fat content of the milk, but a reduction in the fat content of the diet below a certain limit does seem to effect a reduction in the fat of the milk and in the total yield, despite the fact that carbohydrate can readily be turned into fat in the animal body. Another important thing in the relation of diet to milk is the *vitamin* content of the diet. Dr. Gladys Hartwell finds (see p. 963) that an antidote to the toxic effects of excess of protein is to be found in the addition of vitamin B to the diet. So far as we know the vitamins are not manufactured in the animal body. Nursing mothers should, therefore, have access to plenty of vitamins, or there might be danger of the infant suffering from lack of them, in an extreme case; in moderate cases the mother might feel the effects owing to depletion of her tissue vitamins to supply the milk with its normal content of these essential substances.

The volume of milk secreted evidently depends but little on the nature of the food, provided certain minimum requirements are fulfilled; the protein supply is the most important as well as the irreplaceable one. The rate of blood flow through the mammary glands is in all probability the most important factor in deciding the rate of milk secretion; hence the importance of drawing the milk at frequent intervals, also the benefit derived from massage in cases of difficult lactation. It is quite possible that a study of the physiological methods for improving the blood-supply to the breasts may prove of value. The materials for the manufacture of milk circulate in all normal blood. Hormonic influence may play a part in the development of the mammary glands; that it does not play the sole part, or perhaps even the most important one, is indicated by many facts. The occasional lactation in males and in virgins forms an example; here a mechanical factor, perhaps by improving the blood-supply, seems to provoke the dormant gland to activity; it may be that the hormone exerts its effects through similar channels.

VACCINATION AND INFANT WELFARE.

LAST week-end 20 cases of small-pox were found among the aged and infirm at the Poplar Institution, and since the discovery five or six other cases have occurred. Four cases were also notified from Barry originating from a sea-going vessel. The time is apt for popular instruction, and Dr. W. McConnel Wanklyn's address to the National Baby Week Council on Oct. 26th combined reasonableness with brevity, and should serve as an example of useful public health propaganda.

Discussion, he said, should not be limited to the mere pros and cons of vaccination taken by itself, especially as that is the narrow ground to which opponents usually seek to limit it; but the broader field should be occupied of the whole position of small-pox so that a just view can be had of the whole, and proper action taken. Scares can best be avoided by timely and judicious warning. The real position is very simple. It is this. There is now constantly close at hand a calamity in the shape of a small-pox epidemic which is likely to cost thousands of lives, including many infants and young children, and millions of public money. Upon the last epidemic in London £500,000 was spent by the Metropolitan Asylums Board alone. Instructed public opinion is becoming aware of this impending risk and demanding to know what can be done about it. Two main steps are possible for the ordinary citizen by way of meeting this risk himself. One to understand it; the other to promote vaccination. The risk arises from the simple fact that small-pox infests the whole world to the extent of probably millions of cases in a year, and that infection is often brought to this island from overseas. It is usually stopped at the ports, but when it does get into the country it is apt to spread like fire in dry grass. The reason of this is that the great majority of persons, by neglect of vaccination, are susceptible to an attack of small-pox, it being estimated that 80 per cent. would contract the disease if fully exposed to it. In face of this critical state of things what can be done about it? The most important remedial measure is vaccination. That is simply an extension of ancient domestic preventive medicine whereby the mother gives all her children mumps or chicken-pox if one of the family has taken it; only in the case of small-pox, a strain of the disease is taken which has passed through the cow. It is a remedy which is as

disagreeable for one person as another, but it is better than the disease against which it is directed. The most scrupulous precautions are taken in the preparation of the vaccine and its efficacy is beyond question. Striking instances of that are afforded by the babies who have been nursed in the arms of mothers who have themselves been covered with small-pox; yet the babies have been unscathed. Vaccination strengthens the individual against small-pox. In dealing generally with small-pox much depends on the mental attitude taken up.

Success attends the conception that small-pox is not a thing to be awaited passively, but one to be actively attacked and cleared out of the country once and for all. This is not only a policy of humanity, but most emphatically of economy also. A large sum of public money can be saved upon the small-pox account. By the adoption of appropriate measures and by their thorough working, Dr. Wanklyn concluded, small-pox could be cleared out of the country in a twelvemonth.

INFECTIOUS ABORTION AND THE HUMAN SUBJECT.

THE idea that abortion might be an infective disease in some domestic animals, which was long surmised by breeders and stock-keepers, received confirmation in 1897, when Bernhard Bang described the organism, now known as the *Bacillus abortus*, in the discharges of cows suffering from this condition. Bang's organism is a small bacillus, only culturable under rather restricted conditions, and, in cultures, biologically remarkably inert. The matter became subsequently confused on account of the description of a dissimilar organism, by Smith and Kilborne, which was allied to the paratyphoid group, and was isolated from a like condition in mares. It is now believed that both of these species are pathogenic and capable of giving rise to abortion, but that as agents of the epidemic condition they are specific for the animals from which they were originally isolated. The organism of bovine abortion is of particular interest in that it is not uncommonly present in milk, and on inoculation into guinea-pigs produces, as Theobald Smith pointed out in 1912, tubercle-like lesions which are a complicating factor in the search for tubercle bacilli in milk by the method of guinea-pig inoculation. Further, however, the question arises, and it has been recently raised in our columns[1] by Dr. S. G. Moore, whether this bacillus is capable of producing pathological effects in the human subject. The organism has been found at times in the throat and tonsils of children, where it is assumed to have gained access through the ingestion of infected milk, and in the serum of about 6 per cent. of 425 children, who were examined by Larsen and Sedgwick,[2] the complement-fixation test was found positive for this bacillus. The presence of anti-bodies in the blood, which give this test, is usually regarded as an indication of infection by the organism in question and may therefore be invoked as an argument for the pathogenicity of the organism. Interest in the matter is also furthered by the close relationship of the *B. abortus* to the *Micrococcus melitensis* of Malta fever, which has been pointed out by Miss Alice Evans,[3] and it is also claimed that agglutinins developed in response to the one bacillus are active to some degree against the other: there thus being an immunological group relationship. By analogy it may be suggested that, like the *M. melitensis*, the *B. abortus* may be able to invade the human as well as the animal body. As Dr. Moore has suggested, the results of inquiry along these lines into the causation of the many obscure cases of abortion in the human subject might well repay the work expended, even if they were but negative ones.

[1] THE LANCET, Oct. 28th, 1922, p. 935.
[2] Larsen and Sedgwick: American Jour. Dis. of Children, 1913, vi., 326.
[3] Alice Evans: Jour. Infect. Dis., 1916, xviii., 437; 1918, xxii., 576.

MOTOR AMBULANCE SERVICE.

WE recently received from a London medical officer of health a circumstantial account of the discomfort suffered by a friend of his in a motor ambulance hired from a private firm at a fee which was by no means nominal. There was no vessel for micturition, no vomit bowl or bed-pan, and there were no restorative drugs. The bed linen was dirty from the dust coming in through the loosely shutting door. The linen, he was informed, was changed "every other day." No doubt the patient was ill-advised in taking a private ambulance rather than in availing himself of the Red Cross provision. Both the St. John Ambulance Association and the Home Service Ambulance Committee of the Joint Council of the Order of St. John and British Red Cross Society have motor ambulances available for the use of private patients in London. As regards the former, all arrangements for ambulances are made by the Association at St. John's Gate, Clerkenwell. The Home Service Ambulance Committee has two types of vehicle, a luxurious coach-built ambulance on the Vauxhall chassis, and the lighter ambulances on the Ford chassis. The charges for their use vary in accordance with the type of vehicle chosen, but both ambulances are comfortable and efficient. Careful attention is given to cleanliness and equipment. The Joint Council not being a profit-earning organisation, the following scale of charges has been fixed with a view only to covering the cost of maintenance: for the light ambulance, within a six-mile radius of Charing Cross, with driver only, fixed charge, 12*s.*; with driver and orderly, 15*s.* For the coach-built ambulance, within a six-mile radius of Charing Cross, with driver and orderly, fixed charge, 25*s.* For journeys to or from places outside the six-mile radius the charges are arranged on a mileage basis. We are informed that all these ambulances have clean linen for each patient, a vessel for micturition, a bowl for vomiting; and a bed-pan, if going outside the London area. No restorative drugs are carried unless directly prescribed by the doctor or nurse in attendance, but the nurse travelling with a woman patient any distance is usually provided with a restorative for emergencies. Particulars can be obtained from the Home Service Ambulance Committee at the headquarters of the Joint Council of the Order of St. John and British Red Cross Society, 19, Berkeley-street, Piccadilly, London, W. 1.

IN consequence of the Parliamentary election, the meeting of the Dental Board has been postponed from Tuesday, Nov. 14th, to Tuesday, Nov. 21st.

THE death occurred at Edinburgh on Oct. 28th, in his eighty-fifth year, of Dr. Alexander Crum Brown, F.R.S., for nearly 40 years professor of chemistry in the University and well loved by many generations of medical students. He was half-brother of the famous Dr. John Brown of Edinburgh.

SEVEN members of the medical faculty of the French University of Strasbourg having visited the United States as the guests of the Rockefeller Foundation, are now studying the teaching methods of British medical schools with a view to the reorganisation of their own University. The delegation, which includes Dr. Georges Weiss, dean of the faculty and professor of biophysics; Dr. Leon Blum, professor of clinical medicine; Dr. Paul Bouin, professor of histology; Dr. Camille Duverger, professor of ophthalmology; Dr. Pierre Masson, professor of pathological anatomy; Dr. Maurice Nicloux, professor of physiological chemistry, and Dr. Lucien Pautrier, professor of dermatology, will be in this country until Nov. 8th. Arrangements have been made by the Medical Research Council on behalf of the Rockefeller Foundation for members of the party to study work in their respective subjects at some of the medical schools in London and in the Universities of Oxford, Cambridge, and Glasgow.

BRITISH ORTHOPÆDIC ASSOCIATION.

THE annual meeting of the British Orthopædic Association was held in London on Oct. 20th and 21st under the presidency of Sir ROBERT JONES. About 70 members and visitors attended the meeting.

On Oct. 20th, at the house of the Royal Society of Medicine, papers were read on Tumours of Tendons and Tendon Sheaths, by Mr. St. J. D. Buxton; Results of Tendon Transplantation for Intrinsic Hand Paralysis (Ney operation), by Mr. J. G. Johnstone; Köhler's Disease of the Tarsal Scaphoid, by Mr. E. S. Brentnall; Infantile Paralysis, by Dr. Levick; Some Complications of Supracondylar Fractures, by Mr. W. R. Bristow; Two Cases Illustrating the Longitudinal Growth of Scar Tissue and a Case Illustrating the Reaction of Bone to Pressure, by Mr. D. McCrae Aitken; Types of Tubercle Bacilli in Surgical Tuberculosis, by Mr. G. R. Girdlestone; Coxa Plana, by Prof. Murk Jansen; An operation for the Relief of Flexion Contractures in the Forearm, by Mr. C. Max Page. In the afternoon the Association met at the Royal National Orthopædic Hospital. Demonstrations were given by Mr. Jackson Clarke, illustrating the use of spinal supports; Mr. Laming Evans, the results of Whitman's operation for talipes calcaneo-cavus; Mr. R. C. Elmslie, fixation of the tendo Achilles for talipes calcaneus; Mr. A. S. R. Bankart, congenital talipes equino-varus treated by silk fixation after correction of the deformity; Mr. W. Trethowan, bone-grafting for mal-united Pott's fracture, bone-grafting for non-union of radius and clavicle, bone-grafting to reconstruct acetabulum in congenital dislocation of the hip, arthroplasty of hips and knee, tendon transplantation for calcaneus, tendon transplantation (various), flat-feet, congenital club-foot, osteotomy for genu recurvatum, bilateral pes cavus; Mr. A. Rocyn Jones, the results of an operation for hallux valgus and rigidus, and some tendon transplants. Each of the surgeons afterwards performed an operation of the class which was illustrated by the cases he had previously shown.

On Oct. 21st the Association met at the Royal College of Surgeons, where Sir Arthur Keith gave a short demonstration, including a discussion of the osteology of a eunuch. Mr. Lawford Knaggs showed specimens and discussed the pathology of serous periosteitis, osteitis fibrosa, osteomalacia, and leontiasis ossea; Dr. J. H. Thursfield and Mr. H. Fairbank briefly discussed conditions of generalised bone deformities in children. The specimens illustrating these several conditions were demonstrated in the museum. The dinner of the Association on Oct. 20th was attended by 72 members and guests.

THE COUNCIL DINNER OF THE BRITISH MEDICAL ASSOCIATION.

ON Wednesday, Oct. 25th, the Chairman and Members of Council of the British Medical Association gave a pleasant dinner to a selection of representative guests at the Grand Hotel, London. The dinner marked a departure in the official procedure of the Association, inasmuch as one of its main objects was to offer an opportunity for recording the obligation to the retiring President, who hitherto has left his office "unhonoured and unsung" as far as a public occasion has been in question. The toast list was quite short. Sir William Macewen, the President of the Association, in speaking to "The Common Health," while allowing the general progress made in sanitation and therapeutics, pointed to the two great social scourges of syphilis and tuberculosis as requiring organised attack from the medical profession. He considered there had been enough discussion, that concerted action was now indicated, and that in one direction—namely, the eradication of bovine infection—a practical course was open, which should be urged upon the Government Departments concerned. Sir Arthur Robinson, First Permanent Secretary of the Ministry of Health, had a sympathetic reception when he detailed the broad designs and actually large accomplishments of a very young and busy department. The toast was also replied to by Sir Anthony Bowlby, President of the Royal College of Surgeons of England, who spoke from the point of view of the responsibility of the College in respect of the education of those to whom later the maintenance of the Common Health would be consigned. His comparision of the now complicated and lengthy medical curriculum to an elaborate obstacle race through examinations was a very apt one.

Dr. R. Wallace Henry, the Chairman of the Representative Body of the Association, then gave the toast of "The Retiring President," to which Prof. David Drummond of Newcastle replied in appropriate terms, protesting that although the work was onerous he had thoroughly enjoyed it. He pointed out that by the business arrangements of the Association the annual President was kept in touch with the affairs of the Association for three years, because alike as President-elect before office, and as retiring President after office he was necessarily concerned in all active movements of the Association. The toast of "The Guests" was proposed by Prof. R. A. Bolam, the Chairman of Council of the Association, who indicated that there were present at the dinner the Presidents of the two English Royal Colleges and of other medical bodies, representatives of important societies and associations, representatives of Government departments, and of the press. The toast was replied to by Mr. Edward Shortt, until a few days ago Home Secretary, and Sir Henry Craik, until last week Member of Parliament for the Scottish Universities. Mr. Shortt amusingly pleaded that, being, at any rate, no longer Home Secretary, the reason for his presence was gone, but added that he was extremely happy to have dined with the Council of the British Medical Association, of whose good work he was well aware. Sir Henry Craik reminded his hearers that his constituency contained many thousand medical voters, and testified to the good work done in the organisation of the medical profession by the Association, of which he is an honorary member. Sir Jenner Verrall briefly proposed the health of the Chairman and Prof. Bolam replied.

CZECHO-SLOVAKIA.

(FROM OUR OWN CORRESPONDENT.)

A New Minister of Health.

THE formation of a new Czecho-Slovakian cabinet on Oct. 7th has occasioned the appointment of a new Minister of Health. The former Minister, Dr. Bohumil Vrbensky, held office for more than a year, during which period many important steps were taken towards consolidation of the public health service. Two laws must be specially associated with his name—namely, those dealing with venereal diseases and with nationalisation of public health service. It is generally admitted that the latter would never have been enacted but for Dr. B. Vrbensky's persistent efforts. The newly-appointed Minister, Dr. Jan Srámek, is the first layman at the head of this Ministry. He has been professor of theology at the University of Prague, and comes from Moravia, in which former province of the Austrian Empire he had considerable experience in public health administration, being a member of the public health committee of the Moravian Government for many years prior to the war. He has great political influence, being the chief of the clerical party in Czecho-Slovakia. It is generally felt that his appointment means a strengthening of the position of the Ministry of Health.

Expected Insurance Legislation.

The programme of the newly-constituted Government contains a definite promise that a Bill to deal with sickness, old age, and disability insurance will be submitted to the Czecho-Slovak Parliament during its next session. Sickness insurance has existed for

many years, but has been almost entirely in the hands of private workmen's associations. This has led to a splitting-up of the system into small insurance associations which in most cases have been controlled by politicians. Many attempts have been made to unify these associations into larger bodies without political colouring, but all have failed in some degree. The Bill which the Government proposes to submit to Parliament was prepared by a committee especially appointed for this purpose, under the presidency of Dr. L. Winter; its purpose is to combine sickness, old age, and disability insurance associations into one institution. Although the new law will involve considerable financial sacrifice on the part of the State, it is generally anticipated that the Bill will be accepted by Parliament, because it is being supported by all the members of the coalition. The introduction of old age and disability insurance in connexion with sickness insurance is expected greatly to improve the service given by the present insurance associations; up to the present these bodies have not cared very much for the ultimate result of the patient's sickness so long as his desire for immediate relief was satisfied, for an association never knew how long the patient would retain his membership, and was naturally not interested in his permanent health. If the proposed law is put into effect the social insurance institute will be directly interested in members' health up to their deaths, and its enactment is expected to improve the medical service and give a strong impetus to the public health movement.

Child Welfare Administration.

Two foreign child welfare missions worked in Czecho-Slovakia after the war—namely, Lady Muriel Paget's English mission, and the American Red Cross mission directed by Dr. H. O. Eversole. Both missions established child health centres, the former in Slovakia, the latter throughout the rest of the Republic; the work of the English mission was taken over by the Czecho-Slovak Red Cross and the work of the American Red Cross by a special governing board appointed by the Ministry of Health. The need for unification of services in all these child health centres soon began to be felt; at the same time it became apparent that the centres must be run locally, with temporary help from the Ministry of Health, if they were to become permanent institutions. To assist the movement for unification of these services it was decided at the recent meeting of the governing board to appoint an inspector for all child welfare centres in Slovakia, this inspector to be an employee of the Czecho-Slovak Red Cross, indirectly responsible to the governing board in Prague. His work will be to standardise all services in the Slovakian child health centres. Later, the Czecho-Slovak Red Cross will take over all stations in Slovakia, and the rest of the centres will be transferred to the Association for the Protection of Mothers and Children, which will receive from the Government a lump sum as a subsidy for the running of the stations until local branches of the Association can support them entirely out of their private funds.

Centenary of Mendel's Birth.

On Oct. 23rd the centenary of the birth of Gregor J. Mendel was celebrated in Brun, Moravia, where the founder of the science of heredity performed his fundamental experiments when serving as a monk in an Augustinian monastery. The ceremony took place in front of the old monastery, where a modest monument has been erected to the famous scientist. The guests were welcomed by the Rector of the University of Prague, Dr. Boh. Némec, in a speech delivered in Czech, German, and English. The ceremony was followed by a course of lectures on the subjects of heredity and the relationship of science to the vast discoveries of Mendel, and constituted one of the rare occasions upon which Czech and German scientists in Czecho-Slovakia have been brought together; the conviction was expressed that from the field of science a reconciliation between the nations can proceed. The meetings were attended by many prominent scientists from foreign countries. Dr. M. Pease, of Cambridge, Prof. Ch. Davenport, of Washington, Prof. E. Tschermak, of Vienna, and Prof. R. Hertwig, of Munich, took part in the discussion. Among the prominent guests were Dr. A. Ruppin, of Jerusalem, Dr. A. Kleinhoute, of Utrecht, and Dr. Yomaguchi, of Tokio.

Oct. 16th.

Public Health Services.

THE REPUTE OF MEDICAL BENEFIT.

WE pointed out last week the great need of putting the public fully in touch with the facts of medical service under the Insurance Acts. By a happy coincidence there appears in the current number of the *National Insurance Gazette* the report of an address by Mr. A. Clark, clerk to the Aberdeenshire Insurance Committee, to the Association of Scottish Insurance Committees, briefly reviewing the period of ten years during which medical benefit has been in operation. Mr. Clark shows how, in spite of the initial difficulties of launching the scheme with opposition from all quarters, including the medical profession, the benefit has won its place in the scheme of health insurance. Some of the criticism, he thinks, is warranted, a good deal is based upon ignorance or imperfect knowledge of the system, and a considerable portion is frankly described as "melodramatic bunkum." Among the considered judgments quoted the most interesting to medical readers come from a number of insurance committees in widely scattered areas, which make it quite clear that the relationship between the committees and the practitioners has steadily improved, the majority of the committees acknowledging the assistance in the administration of medical benefit rendered by their panel committees. Such testimony comes from London, Manchester, Nottingham, West Sussex, Edinburgh, and Glasgow. As Mr. Clark says, instances might be multiplied, but he thinks that the experiences of these committees are a fair sample of the conditions obtaining in most of the other districts of the country.

Medical benefit is the outcome of the recommendation made by the Poor-law Commission. The health of the employed person is not only of value to himself, it is an asset of both the State and the employer. For this reason the employee does not pay the whole of the cost, but the State and the employer pay a certain proportion. It is an insurance which has nothing in it of the nature of charity. Neither is it cheap, for it is true to say that the medical profession is as well paid for attendance on insured persons as it is for treating private patients of the same social status. Mr. Clark thinks that the number of complaints has been remarkably small; two of his paragraphs are worth quoting:—

> "At the outset, many doctors working under a sense of hostility may have been inclined to differentiate in the treatment given to their panel and private patients, and on the other hand, there is evidence that many insured persons, either from a like hostility to the system, or from sheer novelty of the situation, made unreasonable demands and adopted an unwarrantable attitude. But these were the exceptions, and much capital was made of such cases."
>
> "The true test as to whether or not the service is giving satisfaction is to be found in the records of the Medical Service Subcommittee, the tribunal appointed to deal with all complaints whether by the doctors or the insured persons, and judged by this standard the results cannot be regarded as otherwise than highly satisfactory."

The total number of complaints by insured persons in London with an insured population of nearly 2,000,000 and about 1500 doctors on the panel, during the nine years 1913–1921 was 734, an average of over 80 per annum. Of these, rather more than one-half were substantiated. During the same period the complaints by doctors against insured persons as to conduct while under treatment was 23, and of these 14 were substantiated. In the large industrial county of Lanark, with an insured population of 100,000 and

224 doctors, there have been 60 complaints, 75 per cent. of these were made by approved societies against practitioners with reference to the issue of medical certificates, and the rest related to medical attendance. Of the former, one-half were withdrawn after correspondence in which explanations were given, the remainder were considered by the Committee, and in the majority of these the facts were such that the doctor was merely censured. Of the complaints as to medical attendance the majority were withdrawn, and almost all the others found not to be substantiated. In one case only was it deemed necessary to impose a penalty on the doctor.

It may be perfectly true that there are many insured persons who are not receiving adequate treatment from the insurance practitioner and who make no formal complaint, either through ignorance of procedure, a desire to save themselves trouble, or other similar cause. Such cases there always will be, but every encouragement should be given to the submission of genuine complaints, for it is good neither for the practitioners, nor for the system itself, that such complaints should be withheld from proper consideration. When the opportunity occurs for a thorough inquiry to be made into the working of medical benefit we believe it will be found that the benefit is really popular and that the results can be measured in a substantial reduction in the duration and the financial burden of sickness and incapacity.

A HANDBOOK TO INSURANCE PRACTICE.

A little book on "Medical Insurance Practice"[1] appears most opportunely. The authors are Mr. R. W. Harris, late an assistant secretary in the Ministry of Health, and Mr. L. S. Sack, Barrister-at-Law. It is described as a work of reference to the medical benefit provisions of the National Health Insurance Acts, and is addressed to the busy general practitioner for whom it will prove an ideal book of consultation. For the many who find it difficult or impossible to read and inwardly digest the voluminous literature issued by insurance committees this book, of little more than 300 pleasantly printed pages, will afford safe guidance through the intricacies of panel practice. The arrangement of chapters is such that the framework of the complex system can readily be traced. The relationship of the practitioner to the insured person is described in detail and the responsibility of the practitioner clearly set out. The functions of Minister of Health, Insurance Committee, Local Medical Committee, and Panel Committee are lucidly explained. The use of the second person in referring to the doctor adds to the strength of the appeal to the individual practitioner. An excellent chapter deals with the nature of the medical treatment required to be given to insured persons, and the scope of general practitioner treatment is illustrated by brief summaries of cases which have been submitted to referees. The duty of practitioners where specialist treatment is required is gone into.

On the intricacies of the certification rules the book will be found useful, especially in the exposition as to what the term "incapable of work" means. A section on irregularities in certification indicates the pitfalls of practice, the penalties which may be incurred, and the method in which disciplinary action may be taken by the authorities. Records are fully dealt with and the purposes for which they were designed are set out. The duties of the regional medical staff are given in detail with a sympathetic understanding of their many points of contact with the insurance practitioner. The chapter on remuneration will help practitioners to understand the method by which they are paid for their services under agreement with the Insurance Committees. The short historical account of the capitation system of payment, and the section on the financial scheme showing the sums available for medical benefit, are written with the intimate knowledge of one who up to six months ago was a member of the headquarters staff. The advice on the subject of charging fees to insured persons will be found serviceable. The final chapter on appeals to the Minister, after complaints heard by the local medical service subcommittee, gives the method of procedure to guide the practitioner who is unable to keep within the bounds set by the regulations. The value of the book is enhanced by appendices, which include extracts from the several Insurance Acts and the more important regulations.

We can confidently recommend this book as well-nigh indispensable to the practitioner who wishes to give the best service to his insurance patients with the minimum of risk and inconvenience to himself. The conversational style of the manual, which makes for easy reading, should not disguise the fact that the information conveyed is exact.

[1] The Scientific Press, Ltd. 1922. Pp. 327. 7s. 6d.

DRUGS FOR THE PANEL PATIENT.

An article in the *Hospital and Health Review* for October deals with the rather burning question of the drugs supplied to the panel patient. It has frequently been alleged that a practitioner in prescribing for his insurance patients must apply his mind solely to the question of the cost of the ingredients, but Mr. R. W. Harris, who was formerly responsible for the administration of medical benefits at the Ministry of Health, states that a doctor was far from being limited to the prescription of certain stock mixtures, as he has the whole range of the British Pharmacopœia and the B.P. Codex to select from. On the other hand, it is expected of the prescriber that in the case of two drugs of equal therapeutic value, the less expensive should be selected. Whether the panel practitioner does or does not prescribe in excess of what may reasonably be necessary for adequate treatment is not determined by an irresponsible body of officials but by a committee of his own fellow practitioners. Mr. Harris pertinently inquires whether 15,000 doctors writing prescriptions for 15 million persons can be allowed a free hand in making demands on public funds, and, granting that there must be some check, whether a better system of control could be devised. It would certainly be just cause for complaint on the part of the panel patient if the drugs dispensed for his use were less efficacious than those prescribed by the practitioner for his non-panel patients. We have no evidence that this is the case.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

FOUR CITIES.

THE following table gives the principal health statistics of four prominent industrial cities.

City.	Estimated population (R.-G.).	Birth-rate.	Death-rates per 1000 of population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Respiratory and influenza.	Infant mortality.	Diarrhœa, &c., under 2 years.	Maternal mortality in childbirth.
Birmingham	936,000	23·6	11·0	1·1	1·1	2·1	83	17	2·8
Hull	291,800	25·8	13·0	1·4	1·2	2·4	96	24	4·4
Leeds.. ..	465,500	21·8	13·5	1·4	1·2	2·9	98	18	3·7
Cardiff ..	202,700	24·0	12·1	1·5	—*	2·0†	94	26	4·3

* Figure not available from report.
† Without influenza. Deaths from influenza not given in report.

Birmingham.

Although 1921, with exceptionally bad housing conditions, was one of the healthiest years on record, Dr. John Robertson is convinced that an unenviable heritage is being laid up for the future. The rising generation, he says, cannot become healthy, contented citizens, free from vicious habits, if the present bad

housing conditions continue. There is little power to suggest even a palliative for gross overcrowding and indecency, and a good many families have left Birmingham rather than submit to existing conditions. The population added to the city since last census is about 79,000 persons, and the houses erected during this period would accommodate about 34,000. An endeavour is made to mitigate danger from infectious tuberculosis patients by loaning out shelters and beds and bedding. In spite of the conditions the new cases of tuberculosis are much fewer and the deaths less numerous. The scheme for the eradication of tuberculosis from dairy herds goes on and during the year 16 herds were being dealt with. The testing of six herds has been discontinued, three owing to the large number of those reacting and three owing to the milk being sent elsewhere. The infant mortality rate was one of the lowest on record, and the children who do not die now appear to be healthier and stronger than formerly. The Witton Babies' Hospital was opened in February for wasting babies discovered at the centres, and was used in the autumn for babies suffering from diarrhœa. The treatment gave satisfactory results, but there was an alarming outbreak of diarrhœa among the staff, affecting 20 out of 25, the outbreak being accompanied by a somewhat unaccountable plague of flies. There was a decline in the deaths from puerperal fever, but Dr. Robertson has to record an outbreak at the maternity hospital, which he gives reasons for thinking was associated with sore throats and other septic conditions among the staff. Arrangements have now been made with the governors of the eye hospital for the admission of mothers and babies or babies alone for severe ophthalmia neonatorum. Of 427 cases notified of this disease, the damage recorded was the loss of one eye. The figures available indicate a falling incidence of venereal diseases. The female new cases of gonorrhœa are less than one-sixth of the male; Dr. Robertson infers that women do not realise the disastrous consequences later in life of this neglect to obtain adequate treatment. Good work has been done at the City Hospital, Little Bromwich, in testing the value of the Schick test. The inferior class of fuel used during the coal strike and the subsequent trade depression have had evil results. In some cases the burning of inferior slacks or coal-dust by the aid of forced draught has caused a grit nuisance worse than the black smoke nuisance, and in the new local Act of Parliament a clause has been introduced to deal with grit.

Hull.

Dr. T. Wright Mason reports that Hull has been selected by the Ministry as one of the typical districts for an inquiry into maternal mortality associated with child-bearing and that data are being collected for the purpose from Oct. 1st, 1921. A handy-woman who persisted in practising as a midwife was prosecuted and fined 5 guineas. An increase of the staff of health visitors is urgently needed. The maternity home admitted 224 women for confinement. The erection of a new 25-bed home for lying-in women has had to be postponed. More time is wanted for the examination of "contacts" at the tuberculosis dispensary, and there is the usual complaint that notifications come in too late. Of the 184 cases discharged from the sanatorium during 1920, 73 were reported to be at work or at school at the end of 1921, and 37 were reported to be alive but not working. Of the remainder 52 died in 1920, 12 in 1921, and 10 left the city. The number of new houses erected during 1921 was 286, of which 217 were part of a municipal scheme. Dr. Mason says the housing requirements of the district have not diminished and that it is estimated that 7778 houses are needed, 5000 to relieve the shortage and 2778 to replace houses of a low standard in unhealthy areas. The scheme for the conversion of privies and pail-closets makes slow progress.

Leeds.

Dr. J. Johnstone Jervis in his report for 1921 states that one of the great needs of the city is more hospital accommodation for cases of pneumonia and broncho-pneumonia occurring in insanitary homes. There are beds and to spare, he says, in the Poor-law institutions, and yet they remain unoccupied or not occupied to the best advantage. The drought caused the bed of the River Aire to be very offensive, polluted as it is by sewage effluents and trade refuse, both within the city and before reaching the city bounds. Dr. Jervis makes the somewhat unusual suggestion that the corporation might contribute towards the cost of the up-keep of ashbins. The practice which sprang up during the war of converting large terrace houses into flats and subletting the basements, has led to the revision of the local by-laws in connexion with underground sleeping-rooms. These basements are usually occupied by caretakers, often with families. The health committee has formed itself into a smoke abatement committee, including coöpted members who are particularly interested in or have close knowledge of the subject. It is hoped to enlist the sympathy of all classes of the community, notably of the manufacturers. The special committee has agreed to institute a course of lectures in fuel economy and furnace management for stokers and firemen next winter. Dr. Jervis points out that the local authority may insist on cleanliness in cowsheds, but may not ask for clean cows nor prevent a dairy-farmer from selling a tuberculous cow to a farmer in another district. In the city cowsheds 15 cows with tuberculous udders were found during the year. The number of city dairy-farms at the end of the year was 142. No less than 46 out of 216 milk samples were reported to be adulterated. Eleven prosecutions for "added water" produced £6 in fines. The medical superintendent of Seacroft (Infectious) Hospital is investigating the Schick test. The Leeds tuberculosis scheme lacks institutional provision for the treatment of children, especially of the non-pulmonary cases. Of the total births notified, 4·5 per cent. were stillbirths. The number of new expectant mothers attending the ante-natal centres was 960, or nearly 10 per cent. of the births. From September onwards the distribution of milk was confined to dried milk, partly on account of greater safety and partly on account of easier administration. The Infants Hospital, Wyther, had to be closed for 58 days on account of an outbreak of whooping-cough. The number of houses erected was 1048. The high rentals of the municipal houses are beyond the means of most of those who live in the overcrowded districts. Dr. Jervis thinks that overcrowding has been considerably reduced during the year. New houses are wanted, he says, but the need for better houses is more urgent.

Cardiff.

Dr. Ralph M. F. Picken in his annual report for 1921 says it is unsatisfactory to have to record four cases of damaged vision among the 62 notified cases of a preventable disease like ophthalmia neonatorum, but points out that the hope of prevention lies rather in the treatment of the infant's eyes than the mother's disease. Of 245 fatal cases of pulmonary tuberculosis no fewer than 51 were unnotified at the time of death. No adequate provision has been made for the treatment of tuberculous children, and Dr. Picken suggests that the small-pox hospital, which is to be built, should be used as a "fresh-air" institution for such children. On the initiative of Cardiff, the Association of Municipal Corporations passed a resolution asking the Ministry to bring into force the Milk and Dairies Act of 1915, but Dr. Picken points out that a much weaker Milk Bill is at present under consideration. Dr. Picken records a case of anthrax of unusual origin. The patient was employed by a fruit-merchant and apparently contracted the infection from the hide used for binding orange-boxes. The Glasgow bacteriologist has isolated the bacillus from the hide of oranges-boxes arriving at the port of Glasgow. Steps have been taken by the Spanish Government to stop this method of binding orange-boxes.

Correspondence.

"Audi alteram partem."

A REMINDER TO DENTAL PRACTITIONERS.

To the Editor of THE LANCET.

SIR,—On Nov. 1st notices were issued to those who were registered *on or after July 28th, 1921*, reminding them that a fee of £5 is payable if they desire their names to be retained on the Dentists Register for 1923. If there are any of these persons who have not received a notice in course of post, they should communicate with this office without delay. All applications for dental registration under Section 3 of the Dentists Act, 1921, must be made within the interim period. The interim period will come to an end on Nov. 30th, and any persons who desire to make application, and have not yet done so, should write without delay.

The Dentists Register for 1923 will be published at 10*s.* 6*d.*, or post free 12*s.* Copies, however, which are ordered and paid for prior to Jan. 1st, 1923, will be supplied at 7*s.* 6*d.*, or post free 8*s.* 6*d.*

I am, Sir, yours faithfully,

NORMAN C. KING,
Registrar.

Dental Board of the United Kingdom, 44, Hallam-street, London, W. 1, Nov. 2nd, 1922.

THE DIFFERENTIAL DIAGNOSIS OF SMALL-POX AND CHICKEN-POX.

To the Editor of THE LANCET.

SIR,—Dr. Wanklyn is so well known as an authority on this subject that one feels presumptuous in making any addition to his remarks, but surely he has omitted to mention in his letter (THE LANCET, Oct. 21st) two almost constant symptoms which are very valuable in forming a differential diagnosis. I refer to (1) vomiting in the prodromal stage, and (2) the fall of temperature on the appearance of the rash, rising again later. It is true that vomiting occasionally occurs in chicken-pox, but it is so constant in small-pox that in Basra our O.C., Colonel Woodside, used to teach, "No vomiting, no small-pox." The appearance of prodromal rashes, notably the "bathing drawers" rash, is another useful clinical sign of small-pox.

I am, Sir, yours faithfully,

SIDNEY F. FOURACRE.

Withernsea, East Yorks, Oct. 23rd, 1922.

THE NORMAL INFANT'S CHEST.

To the Editor of THE LANCET.

SIR,—I have read with interest the article on this subject by Dr. J. H. P. Paton and Dr. A. Rowand in your issue of Oct. 14th. Any investigation bearing upon the interpretation of adventitious shadows is valuable, but I was not aware that the facts mentioned by the writers were in dispute at the present time. Possibly they wished to reiterate their views on the normal in the hope that it may help to put an end to much loose writing on the subject. In all normal lungs one finds linear shadows due to the pleuro-pericardial folds, with some arborescence at the bases and to a less extent at the apices, such shadows being thrown by the bronchial tubes and possibly by blood-vessels; further, one has always to recognise the rounded, oval, or elongated opacities with well-defined margin, which are the shadows of bronchial tubes seen in every direction.

It is, however, on the question of the technique adopted that I venture, chiefly in the interest of exactitude, to take exception. In the four skiagrams reproduced every possible distortion has been given to the cardiac shadow by inattention to accurate centring and owing to indifference to the relations of the tube and the patient, thus robbing the present work of much of its value. I sympathise with the writers as to the difficulty in radiographing infants, but I think they are disposed to exaggerate the difficulty. If, in their next essay, they will adopt the following simple régime, I think they will find many of their difficulties ended and their skiagrams will not offend the eye of the radiologist. A piece of three-ply wood, 24 in. in length by 12 in. in breadth, lightly padded with soft wool and covered with linen or calico, is all that is required. To this the infant is bandaged, lying upon its back. The comfort to the infant is immediate; it feels itself supported, which is no little matter. The operator no longer has the constant fear that the infant will wriggle or flex its thighs upon its abdomen at the critical moment, as is the pleasing custom of infants. Finally, the skiagram can be taken with due attention to posture, to the position of the tube, and to the definite knowledge in regard to the central ray, with the tube underneath the couch.

In chest work especially, if it is to be of any value, all shadow deformity due to position must be reduced to a constant, and this can only be done by invariably taking a fixed point—say, the level of the third costal cartilage—as the central point.

I am, Sir, yours faithfully,

STANLEY MELVILLE,
Director of the Radiographic Department of Brompton Hospital.

London, Oct. 24th, 1922.

THE LYMPHOIDOCYTE AND THE TÜRK CELL.

To the Editor of THE LANCET.

SIR,—The paper of Dr. J. C. Matthews and Dr. C. V. Pearson in your issue of Oct. 28th calls for some reply, if only in acknowledgment of the courtesy of Dr. Matthews, who kindly sent me his original MS., and showed me some of his specimens. I do not think we are really at variance, in spite of the statement that their findings are "directly contradictory" to mine. If I take their summary of their conclusions I am in agreement with 1, 2, 4, and 5, especially in regard to the point that the lymphoidocyte could not very well be confused with the Türk cell. I have therefore only to deal with No. 3, which can be very briefly done.

Drs. Matthews and Pearson have "failed to find the lymphoidocyte in infective endocarditis or other serious condition." First, I should not expect to find the lymphoidocyte in "infective endocarditis" of the ordinary type, and, in fact, have never done so myself, though I have examined the blood in many such cases, and indeed this is part of my routine work. As regards other serious conditions, I took as a basis for my second note in THE LANCET patients *moribund* from chronic debilitating diseases, carcinoma, phthisis, diabetes, and so on, and I found lymphoidocytes present in some, though not in all. It is obvious that anyone, even if they took a similar series, which does not appear to be the case, might also fail to find them in *some*, but this is of no value in contradicting my own positive findings in the others. The only value which the paper could have in "controverting" my own work would be if Drs. Matthews and Pearson contended that I had mistaken a Türk cell for a lymphoidocyte, but this they rightly rule out. Their experimental work has no value in this connexion, because I have never contended or thought that lymphoidocytes were present in *acute* conditions, such as were induced in their animals.

I should like to add that I fully appreciate the value of the paper in regard to morphology of the Türk cell. This, however, is in all probability a tissue cell, and I gather from our conversation that Dr. Matthews and I are here in agreement. May I emphasise the fact that Drs. Matthews and Pearson agree with me in the very important point that all blood cells may be traced back to the lymphoidocyte? This is not as yet generally known.

I am, Sir, yours faithfully,

A. KNYVETT GORDON, M.B., B.C., B.A. Cantab.

Bedford-square, W.C., Oct. 28th, 1922.

CHRONIC ENDOCERVICITIS AND ITS TREATMENT.

To the Editor of THE LANCET.

SIR,—It is good news indeed to see the strong interest at last aroused by the pioneer work of the late Dr. Sloan. As long ago as 1910 I used to send patients to see him in Glasgow, or catch him as he passed through London, in order to have his unique opinion on the value of ionisation in individual cases. I had the advantage therefore of having his personal instruction in his methods. Erosions he always considered curable. It is difficult to see how they fail to respond to the means which cure the endocervicitis. It is reassuring to know that other gynæcologists are following his work at length; for so many years now I had become resigned to the discouraging fact that it aroused no interest outside the circle of electrotherapeutists. For those who have not had experience in general practice or special gynæcology it is difficult to master the dexterity required in certain cases; hence one so welcomes the interest of the gynæcologists.

I note that one correspondent refers to the fact that a *zinc* electrode becomes adherent to the mucous membrane. I think this must be a slip; that he had intended to write *copper*.

I am, Sir, yours faithfully,

AGNES SAVILL, M.D.

Devonshire-place, W., Oct. 27th, 1922.

To the Editor of THE LANCET.

SIR,—I would like to thank Dr. Johnston Abraham for his complimentary remarks upon my paper on the above subject contained in his letter in THE LANCET of Oct. 28th. Dr. Abraham raises the question of the diagnosis of gonorrhœal endocervicitis—a question which is quite outside the scope of the paper.

The point which I was anxious to focus attention upon was that chronic endocervicitis, non-gonorrhœal in origin, was also an infective process and as such ought to receive scientific treatment. For this purpose the more elaborate technique one usually adopts in order to isolate the gonococcus was not necessary. The method I adopted produced 92 per cent. of positive cultures, thus proving my point.

With regard to Dr. Abraham's second point, "the incomplete description of the ionic technique," I cannot agree that the zinc rod "becomes firmly held by the mucous membrane and often cannot be dislodged without causing bleeding." I have not experienced this in any of my cases, and invariably remove the rod without reversing the current. This is one of the great advantages of using zinc over copper, as the latter usually sticks.

I am, Sir, yours faithfully,

JOHN WILLIAM BURNS.

Rodney-street, Liverpool, Oct. 30th, 1922.

THE LATER EFFECTS OF GAS POISONING.

To the Editor of THE LANCET.

SIR,—It is stated by Lieut.-Colonel T. E. Sandall, in your issue of Oct. 21st under the above heading, that "there is a popular impression that pulmonary tuberculosis is a frequent sequela of gas poisoning, but I do not think this is borne out by the facts in this area at any rate." Colonel Sandall also states that "In only one case of the series, also, were there any physical signs suggestive of pulmonary tuberculosis, and in this case the evidence was not conclusive." In this industrial area, population 291,100, the Local War Pensions Committee referred all the gassed cases with any suspicion of lung disease to the tuberculosis officer as one of their medical referees, and in at least 15 of them tuberculosis of the lung developed. None of these cases was discharged with tuberculosis. Of these 15 cases of pulmonary tuberculosis detected, 8 had tubercle bacilli in the sputum and 7 had not. Of the 7 T.B. negative cases, 4 had a definite history of hæmoptysis (all cases giving a history of streaky sputum being ignored), and in the other 3 the physical signs were definite, the diagnosis in one case being confirmed by radiographic examination. Of the T.B. positive cases, tubercle bacilli were found at various intervals after gassing. These periods are as follows:—

T.B. + Cases, after Gassing.—Within 1 year, 1; 2 years, 3; 3 years, 1; 4 years, 1; 5 years, 2. In all these cases the sputum was repeatedly examined.

Of the hæmoptysis positive cases, the hæmoptysis was discovered at various intervals after gassing. These periods are as follows:—

Hæmoptysis + Cases, after Gassing.—Within 1 year, 2; 2 years, 2.

It will be seen from these results that tuberculosis of the lungs is not an uncommon sequela of gassing.

I am, Sir, yours faithfully,

HAROLD VALLOW,
Oct. 25th, 1922. Tuberculosis Officer, City of Bradford.

PRIMARY PHLEGMONOUS ENTERITIS.

To the Editor of THE LANCET.

SIR,—Dr. Edmund Cautley's suggestion that the case described in your issue of Oct. 21st under the above title should be regarded as one of Henoch's purpura and that the patient would have recovered without operation is one which I am unable to accept. In making this suggestion Dr. Cautley evidently relies more on the clinical phenomena than on the pathological findings. But even on clinical grounds the diagnosis of Henoch's purpura does not meet the case. There was no history of a previous attack, no clinical evidence of any form of hæmorrhagic extravasation, the rash was an erythema—not a purpura—and there was no suggestion of intestinal obstruction. On the contrary, the pyrexia suggested an acute inflammatory lesion and the joint symptoms were regarded as a manifestation of an alimentary toxæmia. The histological evidence, however, is of the greatest importance, and one can only conclude from the presence of a small-celled infiltration—widespread throughout the wall of the affected intestine—that the condition was, as described, a phlegmonous inflammation of the small intestine. In my opinion, if the operation had not been performed, the chances of the patient's recovery would have been nil.

I am, Sir, yours faithfully,

Manchester, Oct. 27th, 1922. E. E. HUGHES.

THE PREPARATION OF VACCINES.

To the Editor of THE LANCET.

SIR,—In a paper entitled the Action of Vaccines, which was published under my name in your issue of Oct. 7th, brief reference was made to new methods which have been introduced for the preparation of vaccines with the object of reducing what is described as the toxicity of vaccines. In your issue of Oct. 14th is published a letter from Dr. David Thomson in defence of his "detoxication process" which he claims "does not *destroy* the antigenic *nature* of the vaccine" (the italics are mine). I should like to point out that the quotation from my paper given verbatim in Dr. Thomson's letter definitely gives my opinion that "the actual effect of this procedure is to *weaken* enormously the antigenic *value* of the vaccine." These two sentences disclose an entirely different standpoint.

As I have not access at the moment of writing to Dr. Thomson's papers I trust that my memory serves me correctly in stating that Dr. Thomson's conclusions in this matter are based chiefly on observations on complement deviation and agglutinin. I do not recall any reference to carefully controlled comparative quantitative tests with a vaccine before and after treatment by his process. More important still is the question of comparative protection tests on animals with vaccine before and after treatment by his process. Under these circumstances Dr. Thomson cannot fairly complain if his claim to have provided proof of his contentions is not accepted.

My views have been expressed in the above-mentioned paper and do not call for emphasis or repetition. Will Dr. Thomson state if he is able to furnish conclusive data, especially data of animal protection experiments with vaccine before and after treatment, in refutation of the statement that his detoxication process enormously weakens the antigenic value of the vaccine? I am, Sir, yours faithfully,

Florence, Oct. 24th, 1922. J. PRATT-JOHNSON.

THE IRISH ROYAL COLLEGES AND THE FREE STATE SENATE.

To the Editor of THE LANCET.

SIR,—In the final stages of the debate in which Dail Earann passed the constitution for the Free State, a clause was added to the draft directing the President, when making nominations to the first Senate, to take the advice of certain professional and business organisations in Ireland. Among the bodies named are the Royal College of Physicians and the Royal College of Surgeons. It is generally assumed that each College will be permitted to recommend one or two persons for nomination to the Senate. The debate on this clause was marked by an attack on the Royal College of Physicians by a Deputy, who stated that the College was merely an appanage of Trinity College, and that favour was shown in elections and appointments to graduates of Trinity College as compared with other physicians. There does not seem to be any substance in the charge. On only one occasion during the past quarter of a century was a candidate for Fellowship rejected, and he was subsequently elected. On another occasion a candidate proposed withdrew before the date of election. One of these gentlemen happened to be a graduate of Trinity College, the other was not. Of the Presidents who have held office during the same period nearly half have been Fellows who have not been graduates of Trinity College. Of the three leading Honorary Fellows resident in Ireland two are distinguished medical men not of Trinity College.—I am, Sir, yours faithfully,

ONE OF YOUR IRISH CORRESPONDENTS.

Dublin, Oct. 30th, 1922.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Capt. A. Maclean is promoted to flag rank to fill the vacancy caused by the retirement of Surg. Rear-Admiral Sir D. J. P. McNabb.

Surg. Lt. S. R. Johnston to be Surg. Lt.-Comdr.

E. J. Benson to be Surg. Lt.

Temp. Surg. Lt. (D.) J. L. Lean transferred to Permt. List with original seniority.

ROYAL ARMY MEDICAL CORPS.

Inspr. of Med. Servs.: Lt.-Col. and Bt. Col. (tempt. Col.) Sir M. H. G. Fell relinquishes his appt. at the War Office and retains his temp. rank whilst spec. empld.

Maj. T. H. Gibbon relinquishes the temp. rank of Lt.-Col. on ceasing to be empld. as Asst. Dir. of Pathology.

Maj. W. K. Beaman is placed temp. on the half-pay list on account of ill-health.

Capt. and Bt. Maj. T. A. Weston and Capt. K. L. O'Sullivan retire, receiving a gratuity.

Capt. J. L. R. Philip, late temp. Capt., R.A.M.C., on ceasing to be empld. with the Ind. Med. Serv., is granted the rank of Capt.

Temp. Capts. S. P. Hyam and J. R. Kemp relinquish their commns. and retain the rank of Capt.

Temp. Capt. P. Boyle relinquishes his commn. on ceasing to be empld. as a Dental Surg. and retains the rank of Capt.

TERRITORIAL ARMY.

Capt. C. B. Moss-Blundell, from San. Co., to be Capt.

Lts. G. E. Lloyd and P. Lloyd-Williams to be Capts.

The undermentioned having attained the age limit are retired and retain their rank, except where otherwise stated: Maj. W. Young; Capts. W. T. Barrie (with permission to wear the prescribed uniform), E. P. Minett, J. Grant Johnston, W. Ritchie, T. P. Thomas, and R. Cross.

Capt. H. D. Pickles relinquishes his commn. on account of ill-health and retains the rank of Capt.

The undermentioned relinquish their commns. and retain their rank: Capts. G. S. Glass, F. C. Kempson, and T. J. P. Saunders.

The undermentioned resign their commns. and retain their rank, except where otherwise stated: Lt.-Col. H. W. Thomson (with permission to wear the prescribed uniform); Maj. G. B. Fleming (granted the rank of Lt.-Col.); Capts. J. Taylor (granted the rank of Maj.), G. W. Rogers, R. F. Young, and J. K. Rennie.

General Hospitals: Lt.-Col. H. Collinson resigns his commn. and is granted the rank of Col., with permission to wear the prescribed uniform. Maj. (Bt. Lt.-Col.) J. H. Drysdale relinquishes his commn. and retains his rank.

Supernumerary for Service with O.T.C.: Capt. I. W. Corkey resigns his commn. and retains his rank.

TERRITORIAL ARMY RESERVE.

Capt. J. C. Bridge having attained the age limit is retired, and retains the rank of Capt.

Sanitary Companies: Capt. A. S. Reeves, from 2nd Lond. San. Co., to be Capt.

ROYAL AIR FORCE.

Flight Lt. H. S. C. Starkey is granted a permanent commission in the rank stated. (Since promoted.)

Flight Lt. T. M. Walker is granted a short service commission, retaining his present substantive rank and seniority.

Capt. B. F. Beatson is granted a temporary commission as a Flight Lt. whilst seconded for duty with the R.A.F.

Medical News.

UNIVERSITY OF OXFORD.—An award of the Francis Gotch memorial prize will be made in the present term.

Radcliffe Prize, 1923: This prize, which is of the value of £50, will be awarded by the Master and Fellows of University College upon the report of the examiners, for a memoir, or papers, embodying research in any branch of medical science. The prize is open to all graduates of the University who have proceeded, or are proceeding, to a medical degree in the University. Candidates, at the date of application, shall not be Radcliffe Fellows. Any graduate who was eligible during the years of the war will be eligible for the next ensuing award (1923). Candidates are required to send in their memoirs on or before Dec. 1st, to the assistant registrar of the University, Clarendon Building, Broad-street, Oxford, from whom further particulars can be obtained.

M. Emil Coué will lecture on the subject of Suggestion in the Examination Schools on Saturday, Nov. 25th, at 12 noon.

The Faculty of Medicine has re-elected Sir Frederick Andrewes, F.R.S., to be a member of the Board of Electors to the Professorship of Pathology.

UNIVERSITY OF LONDON.—Mr. H. J. Waring has been elected Dean of the Faculty of Medicine for the period 1922-24.

A course of eight lectures on Secretion and Internal Secretion will be given by Prof. Swale Vincent at Middlesex Hospital Medical School, Union-street, W. 1, at 5 P.M., on Mondays and Thursdays, Nov. 6th, 9th, 13th, 16th, 20th, 23rd, 27th, and 30th. Attendance at this course is recognised in connexion with the B.Sc. (Honours) degree in Physiology. Admission free without ticket.

UNIVERSITY OF MANCHESTER.—Mr. E. J. Sidebotham, who recently resigned his post as deputy director of the Public Health Laboratory, has been appointed Honorary Lecturer in Public Health. The following appointments have been made: Honorary Assistant Lecturer in Experimental Physiology, G. J. Langley, M.D., B.S. Lond.; Leech Fellowship, C. D. Hough, M.B., Ch.B.; Entrance Scholarships in Medicine, Florence V. Stephen, B.Sc., and N. S. Walls, M.Sc., Ph.D.

MEDICAL GOLFING SOCIETY.—The autumn meeting was held at Littlestone on Oct. 21st and 22nd by permission of the Committee of that club and was in every way a success. The results were as follows:—

Singles v. *Bogey* (cup presented by Mr. Ernest Clarke).—H. D. Gillies, 1 up; T. P. Kolesar and E. Grogono, each 2 down.

Foursomes v. *Bogey* (cups presented by Mr. G. Dawson and Dr. Rolf Creasy).—L. W. Bathurst and E. Laming Evans, 4 down, after a tie with L. Bromley and F. D. Saner, and E. Grogono and L. Welpby.

Challenge Cup for best 18 holes medal round (presented by E. Canny Ryall).—J. Grace, 87–9 = 78; 2nd, Sir M. Rees, 83–4 = 79; 3rd, E. Laming Evans, 89–9 = 80.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An ordinary Comitia of the College was held on Oct. 26th, Sir Humphry Rolleston, the President, being in the chair.—The following candidates having passed the required examination were admitted as Members: Drs. Mahomed Khalil Abdel-Khalik, Alexander G. Biggam Rowland, H. Coombs, Stuart J. Cowell, Arthur H. Douthwaite, William N. Goldschmidt, George N. Lorimer, Henry F. Maudsley, Hamilton Morton, Percival B. Mumford, Robert C. Priest, James M. Smellie, William Stobie, Donald W. Winnicott, and Lewis R. Yealland.—Licences to practise Physic were granted to the undermentioned candidates, who have passed the required examinations and conformed to the by-laws and regulations:—

M. A. Afifi, Cairo and Middlesex; J. H. Andre, London; P. B. Atkinson, King's Coll.; Hawah K. N. Attaoullah, Royal Free; J. R. Azurdia, Liverpool; R. A. de C. Basto, Hong-Kong and London; W. Beaumont, London; A. O. Bekenn, Birmingham; F. J. Biddle, Guy's; H. Boger, Univ. Coll.; E. B. Brooke and A. W. Brown, Cambridge and St. Bart.'s; Margaret M. Brownstone, Univ. Coll.; A. G. Bull, King's Coll.; Gertrude B. G. Carden, Royal Free; C. O. Carson, Guy's; N. E. D. Cartledge, St. Bart.'s; S. A. R. Chadwick, St. Thomas's; Grace D. Chambers, St. Mary's; E. F. Chapman, Oxford and St. Bart.'s; J. R. Chaudhri, Punjab and St. Mary's; J. Cohen, Manchester; J. Cohen, St. Mary's; M. J. Cohen, Liverpool; F. M. Collins, Cambridge and King's Coll.; J. L. Cox, London; Eleanor M. Creak, Royal Free and Univ. Coll.; A. L. Crockford, Cambridge and St. Thomas's; H. P. Daly, Birmingham; D. Davidson, King's Coll.; D. A. Davies, Cardiff and St. Thomas's; F. Davies, Cardiff and Univ. Coll.; Kathleen F. Davies, Univ. Coll.; G. Denton, Leeds; Enid M. Dixon, London; J. H. Doggart, Cambridge and St. Thomas's; Alice E. Dove, Univ. Coll.; Winifred Ealand, Royal Free; A. M. Edwards, Cardiff and Charing Cross; C. Fenwick, Durham; L. French, St. Thomas's; Lydia S. Fuller-Maitland, Royal Free and St. Mary's; I. W. Gallant, Univ. Coll.; C. P. R. Gibson, St. Thomas's; W. Girgis, St. Mary's; S. Glass, Birmingham; Janet V. Good, London; J. Griffiths, Cardiff and Charing Cross; A. W. Hall, H. A. H. Harris, and H. W. Harvey, Guy's; J. K. Hasler, Middlesex; E. Haworth, Univ. Coll.; Evelyn N. Heather, Royal Free; F. J. Hector, Bristol; H. S. Hogg, St. Thomas's; W. G. R. Hore, Guy's; W. E. Howell, Cardiff and St. Bart.'s; F. Hudson, Univ. Coll.; K. E. A. Hughes, St. Thomas's; D. M. Hutchinson, Sheffield; M. B. Jay, St. Bart.'s; A. D. W. Jones, Westminster; S. P. Joshi, Bombay and London; C. L. Kark, Guy's; R. W. C. Kelly, Calcutta and St. Mary's; F. I. Labieb, Charing Cross; Gladys M. Lambourne, Royal Free and St. Mary's; H. D. Lawson, London; Catherine E. L. Lendrum, Royal Free; E. G. Lewis, Charing Cross; E. Liston, Manchester and St. Bart.'s; J. L. Livingstone, King's Coll.; A. E. Lorenzen, St. Bart.'s; F. Louis, Univ. Coll.; G. S. Lund, Cambridge and St. Thomas's; Mary C. Lynch, Royal Free and St. Mary's; Elizabeth K. MacKay, Royal Free and Charing Cross; Elizabeth McKerrow, Royal Free; Elizabeth Maitland-Jones, Edinburgh and London; R. Manners, Durham and Charing Cross; A. W. Marrison, Manchester and St. Bart.'s; V. M. Matthews, Calcutta and St. Mary's; H. C. Meathrel, Guy's; E. B. Messinier, Calcutta and Middlesex; Mary Michael, Royal Free; A. A. Moncrieff, Middlesex; Herta Moos, King's Coll.; J. A. Morton, St. Bart.'s; Lily Moss, St. Thomas's; K. Olaffson, Iceland and Edinburgh; Dorothy Pantin, Royal Free; I. N. O. Price, Cardiff and London; A. B. Rao, Madras and Middlesex; J. W. Rigby, Sheffield; C. V. D. Rose, Univ. Coll.; J. S. Salt, Charing Cross; C. Satyaraju, Madras and St. Mary's; H. S. Savage, Birmingham; Eileen M. Saxton, St. Mary's; J. Seelenfreund, London; I. A. Senanayeke, Univ. Coll.; D. G. Sharp, Cambridge and Guy's; P. H. Sharp, Sheffield; C. Shepherd, Cardiff and Guy's; H. L. Shepherd, Bristol; Doris K. Shuttleworth, Leeds; A. E. Slater, Cambridge and St. Thomas's; G. M. Stoker, Guy's; Emma Marjorie Store, Royal Free; A. G. Story, Cambridge and St. Thomas's; B. H. Stribling, London; H. Summers, St. Bart.'s; H. J. V. Sutton, Middlesex; C. G. Taylor, Cambridge and Guy's; Agnes W. O'Dwyer Thomas, Royal Free; M. A. Townshend, Univ. Coll.; Lendal Tweed, Royal Free; W. J. Vickers, Birmingham; A. H. C. Visick, St. Bart.'s; Doreen G. C. Walker, Bristol; J. A. Walker, St. Mary's; S. F. Wickramasinghe, Ceylon and Westminster; W. G. Wickremesinghe, Ceylon and London; Helen P. Wilkinson, Charing Cross; E. Williams, St. Thomas's; and Caroline I. Wright, Charing Cross.

Dr. J. H. Drysdale was appointed an examiner in medicine on the nomination of the Council in place of Dr. H. Morley Fletcher.—The Senior Censor moved that the licence of the College, which was withdrawn from Thomas Stoney Sharpley in April, 1919 be now restored to him. This was carried.—The Registrar moved for the second time that By-law CXIV., relating to candidates for the Membership, be repealed. The by-law now reads as follows:—

No candidate shall be admitted to examination who is engaged in trade; or who dispenses medicine, or makes any engagement with a chemist or any other person for the supply of medicines; or who practises medicine or surgery in partnership, so long as that partnership continues.

This was carried and the by-law is accordingly repealed.—The President announced that he had nominated Prof. E. Starling to deliver the Harveian Oration and Dr. John Hay to deliver the Bradshaw Lecture.—On the suggestion of the President it was decided to give a conversazione in the College in November. It was left to the President to nominate a committee for this purpose.—Counsel's opinion in regard to the terms of the Lloyd Roberts' legacy was considered and the arrangements possible in regard to the lectures to be delivered in connexion with it was considered and it was decided to act in accordance with the opinion given.—A report dated Oct. 16th was received from the Committee of Management recommending for adoption new regulations for the preliminary examination in general education and for the pre-medical examination in chemistry and physics, together with the revised synopses of chemistry and physics, to come into force on Jan. 1st, 1923. They also recommended new regulations of professional study for the Diploma of L.R.C.P. and M.R.C.S., together with the synopses of anatomy and physiology and the syllabus of the course of instruction in general biology.—Dr. R. A. Young was appointed a member of the Committee of Management in the place of the late Sir James Galloway.—After some formal College business the President dissolved the Comitia.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—The following have passed the Final Dental Examination and have been granted the diploma L.D.S. R.C.S. Edin.:—

Angus Millar, Oswald F. Lowe, Frederick W. S. Finch, David Mason, James Stewart, Gordon S. Richardson, Rosamond Caseley, William M. Fisher, Alexander J. Sutherland, Margaret H. White, Alexander G. Cresswell, David Geekie, John N. Rodger, and John Young. The following passed in the subject of Medicine and Surgery: Robert G. Doig, Robert P. Anderson, Alexander Phillips, Gilbert Alphonso Loots, James G. Mackintosh, Arthur H. Wynne, William Mason, Andrew Smith Irving, and Henry A. Andrew.

KING EDWARD'S HOSPITAL FUND: COMBINED APPEAL DISTRIBUTION.—King Edward's Hospital Fund for London has made a further distribution of £100,000 out of the proceeds of the Hospitals of London Combined Appeal, making, with the sum of £150,000 distributed on August 3rd, a total of £250,000. The second list of payments contains the names of 120 hospitals. Of the cheques paid, 45 are for sums of £500 and more; among the latter, 28 are for £1000 and over, 16 for £2000 and over, 9 for £3000 and over, 6 for £4000 and over, and 4 for £5000 and over. The hospitals are informed that, in accordance with the original scheme of the appeal, the grants are based, inter alia, on the number of occupied beds and out-patient attendances, and on the evidence as to general efficiency, financial needs, and efforts made to assist the appeal. Neither the first payment on account, nor the first and second taken together, necessarily represent the judgment of the Fund as to the proportions in which the ultimate total proceeds of the appeal should be allocated.

CAMBRIDGE UNIVERSITY MEDICAL SOCIETY.—On Oct. 18th, Mr. E. S. Fellows-Farrow of Downing, President of the Society, in the chair, Dr. Drummond-Robinson showed a cinema film of normal labour. The first part of each of the two films showed the mechanism of labour by means of animated diagrams, and the delivery of a normal vertex case and a normal breech case were also shown.

SOCIETY OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the annual general meeting of Fellows and Members of the Royal College of Surgeons, which will take place on Nov. 16th, at 3 P.M., resolutions will be submitted on behalf of the Society: (1) affirming the desirability of admitting members to direct representation on the Council of the College; and (2) requesting the President of the College to furnish a detailed statement setting out the reasons for the Council's refusal to allow representation on the Council of Members in general practice. In the second resolution the President is also asked to state whether legal advice has been taken as to any possible means of arranging for such representation, and, if so, what that advice was. The first resolution is being proposed by Dr. Redmond Roche and seconded by Dr. E. E. Ware; the second is being proposed by Dr. M. I. Finucane and seconded by Dr. F. W. Collingwood.

ROYAL SANITARY INSTITUTE.—A short series of lectures on Tropical Hygiene in its Relation to the Public Health Service, primarily intended for sanitary inspectors, will be held daily from Nov. 20th to 24th inclusive, at 90, Buckingham Palace-road, London, S.W., at 4 P.M. On Nov. 20th Dr. Andrew Balfour will speak on the Sanitary Inspector in the Tropics, Sir Ronald Ross F.R.S., presiding. On the 21st Lieut.-Colonel W. W. Clemesha will speak on Hookworm Disease and the Method of Controlling It, Sir R. Havelock Charles presiding. On the 22nd, Parasitic Worms and their Migrations will be the subject of an address by Prof. R. T. Leiper, when Sir William Leishman, F.R.S., will preside. On the 23rd Lieut.-Colonel H. J. Walton will discuss Flies and Mosquitoes, under the presidency of Colonel A. W. Alcock, F.R.S., and on the 24th Dr. H. B. G. Newham will lecture on Malaria and Other Diseases, Sir J. Kingston Fowler presiding.

TUBERCULOSIS SOCIETY.—The annual meeting of this Society is being held to-day (Friday) at 7 P.M. at the Restaurant Parisien, New Compton-street, London, W.C. 2, and will be followed by a special dinner.

WELSH SCHOOL OF MEDICINE.—On Oct. 19th the Anglesey County Council refused to agree to the levy of a rate of ½*d.* in the pound (which would bring in £100 a year) for the support of the Welsh National School of Medicine at Cardiff.

NATIONAL RAT WEEK.—On Nov. 6th, at 8 P.M., a public Conference on Rat Destruction on coöperative and coördinated scientific lines will take place at St. Pancras Town Hall under the joint auspices of the Incorporated Vermin Repression Society and the St. Pancras Borough Council. The conference is receiving strong support, and the speakers will include the Mayor of St. Pancras, Lord Aberconway, Dr. Nathan Raw, Sir Bruce Bruce-Porter, Dr. Jane Walker, Prof. W. J. R. Simpson, Prof. J. Eyre, Mr. T. Mark Hovell, and Lieut. Alfred E. Moore.

A conference will be held in the Council Chamber at the Municipal Offices, 197, High Holborn, London, W.C. 1, on Nov. 6th. The chair will be taken at 3 P.M. by the Mayor of Holborn and the conference is open to all interested in the medical and economic problems connected with the repression of rats.

THE LATE MR. C. H. EVANS.—Charles Hotham Evans, F.R.C.S., who died on Oct. 21st, was the fourth son of the late Staff-Surgeon Evan Evans, R.N. After many years in private practice Mr. C. H. Evans retired, but at the commencement of the war he volunteered for service, and received a commission in the R.A.M.C. After a year spent in examining recruits, he asked for service abroad, and went to Malta, where he was placed in command of St. Patrick's Hospital with the rank of Major. Subsequently he served in succession in Salonika, on a hospital ship, and on an ambulance-train until the armistice. Later he held posts in various army hospitals in this country, and in Ireland, at Spike Island, Cork, and in Limerick. During his arduous service in the South of Ireland the illness commenced from which he died.

DONATIONS AND BEQUESTS.—The late Mr. Sydney Hall Gillam, of Christchurch, Hants, left by will £1000 to the Bristol Eye Hospital and £1000 each to the Royal Blind Pension Society, National Blind Relief Society, London, Society for Granting Annuities to the Poor Adult Blind, Royal School for the Indigent Blind, Leatherhead, National Benevolent Institution, Royal Hospital for Incurables, Putney Heath, British Home and Hospital for Incurables, Streatham, Cancer Hospital, Brompton, and Dr. Barnardo's Homes.—By will the late Sir James Affleck left for the Edinburgh Royal Infirmary £5000 to the general funds, £2000 for the benefit of the nursing department, and £1000 for the purchase of radium.—The late Mr. Miles Astman Wood, for several years M.O.H. for Ledbury and consulting physician to the hospital there, left by will £150 each to Ledbury Cottage Hospital, the Royal Medical Benevolent Fund, Epsom College Medical Institution, and Dr. Barnardo's Homes.

SCOTTISH BOARD OF HEALTH: THE GRADING OF MILK.—The Milk and Dairies (Amendment) Act, 1922, authorised the Scottish Board to make an Order in regard to licences for the sale of graded milk. The Board have now issued, to producers of higher grade milk and others, a memorandum showing the principal conditions under which the statutory Order will be made. Before issuing this Order the observations of those interested have been invited. The Milk and Dairies Act, 1922, contemplates four grades of milk in Scotland—viz.: (1) Certified milk; (2) Grade A (tuberculin tested) milk; (3) Grade A milk; (4) pasteurised milk. It is proposed that the administration in regard to all four shall be placed in the hands of local authorities under the Public Health (Scotland) Act, 1897. Certified milk is milk obtained from tubercle-free cows and bottled at the farm. Grade A (tuberculin tested) milk is the same as certified milk, except that it is not bottled at the farm. Grade A milk is milk obtained from herds which have been examined at least three times a year at the farmer's expense by a veterinary surgeon, but the examination will not include tuberculin tests. A statement issued by the Board concludes: "It is not intended to prescribe the use of any particular make of pasteuriser, but the milk must be retained at a temperature of not less than 145° and not more than 150° F. for at least half an hour, and be immediately cooled to 45° F. This condition, of course, will only apply to milk which is sold under the designation 'pasteurised.' Tuberculin tests for the first two grades will be carried out at the expense of the farmer. A score card inspection will be made by the local authority in connexion with certified milk, and annual fees will be payable in respect of all grades, in order to cover some of the expenses incurred by local authorities. The milk when delivered to the consumer must not contain more than a specified number of bacteria."

OWING to the indisposition of Sir Arthur Keith, F.R.S., the Huxley Lecture, which was to be delivered on Wednesday next, Nov. 8th, has been postponed to a later date.

MINISTERIAL APPOINTMENTS.—The following appointments are announced: Minister of Pensions, Major G. C. Tryon. Parliamentary Secretary, Ministry of Health, Earl of Onslow (reappointed). Under-Secretary for Health for Scotland, Mr. James Kidd.

NO. 30 GENERAL HOSPITAL, B.E.F.—A reunion of the officers of this hospital will take place in London on Dec. 8th. Those who intend to be present should notify Dr. J. B. McDougall, Wooley Sanatorium, Hexham.

BELFAST UNIVERSITY SERVICES CLUB.—The fourth annual Armistice dinner will take place in Thompson's Restaurant, Donegal-place, Belfast, on Nov. 11th, at 7.30 P.M. Tickets, 12*s.* 6*d.* (exclusive of wine), from Hon. Secretary, Services Club, University, Belfast.

RONTGEN SOCIETY.—A meeting will be held on Nov. 7th, at 8.15 P.M., at the Institution of Electrical Engineers, Savoy-place, Victoria Embankment, London, when Sir Humphry D. Rolleston will deliver his presidential address on Acute Constitutional Symptoms due to Radiations.

MEASLES EPIDEMIC IN MANCHESTER.—The prolonged epidemic which recently showed signs of decreasing is again causing anxiety. In the week ended Oct. 21st there were 215 fresh cases and three deaths—a total greater than that of the preceding weeks.

LEEDS SCHOOL OF MEDICINE.—The thirty-ninth annual dinner of the past and present men students of this school will be held at the Queen's Hotel, Leeds, on Nov. 17th, at 7 P.M., when Dr. G. W. Watson will preside. Tickets (10*s.* each, exclusive of wine) may be obtained from the Hon. Secretaries, Mr. J. Shutt and Mr. G. F. Walker, at the Medical School, Leeds.

AN informal unofficial conference of European workers on experimental tar cancer was held in Amsterdam on Oct. 25th to 27th. Representatives from most European countries were present and an interesting programme was carried through under the presidency of Prof. J. Rotgans. As a result of the conference an unofficial association of workers was founded with the title Leeuwenhoek Association. The members of the conference were entertained during their stay with characteristic Dutch hospitality and all were well pleased with the results attained.

NAVAL MEDICAL MEMORIAL.—The memorial designed for the Royal Naval Hospital, Chatham, will be unveiled at the hospital at 3.30 P.M., on Nov. 11th, by Surgeon Vice-Admiral Sir Robert Hill and dedicated by Archdeacon C. W. C. Ingles, Chaplain of the Fleet. Owing to changes in the addresses of many temporary medical officers, reserve nursing sisters, and others who subscribed to the Fund, it has not been possible to send separate invitations to all. It is hoped that this intimation will be accepted by them, as well as by all friends and relatives of the fallen, as an invitation to attend the ceremony.

NORFOLK AND NORWICH HOSPITAL.—The quarterly report of the board of management of this institution shows that the number of in-patients admitted during the three months ending Sept. 30th was: discharged soldiers 77, civilians 729; and the daily average number of in-patients was: discharged soldiers 43, civilians 196. The number of operations performed was 543. New cases treated in the out-patient department numbered 1144, against 888 for the corresponding period last year, and accidents and casualties 1821, as against 1816 last year. According to the last annual report, the cost of an in-patient per week was £3 7*s.* 7*d.*, and of an out-patient 8*s.* It was hoped that this cost would be slightly reduced this year. The board appealed to the generosity of the public in the city and county to assist in maintaining the increased cost of the hospital. There had been a falling-off in the receipts from fêtes and entertainments held on behalf of the hospital, only one-third of the amount received in the corresponding period last year having been realised. The Alexandra Rose Day held in Norwich, organised by the lady mayoress, brought in the substantial sum of £414 19*s.* 4*d.*, and £120 had been received from the Football Cup Committee. The board were about to instal two electric lifts for the transport of patients, but the cost, approximately £2500, would not be a charge on the hospital funds, as the members of the board of management had given donations sufficient to pay for one lift, and a special collection for the other was now being undertaken by the Contributory Scheme Committee. Further appeals were made for support in financing the scheme for a new heating apparatus, which was stated by the consulting engineer to be urgently required. An appeal was also made by Mr. S. H. Burton, consulting surgeon to the hospital, for a new up-to-date operating table, which would cost 200 guineas.

THE PARLIAMENTARY ELECTION:
MEDICAL CANDIDATES.

IN the Parliament of 1918–22 medicine had a small but effective representation in the House of Commons. Ten original Members of the House possessed a medical qualification and an eleventh was added at a bye-election.

Sitting and Retiring Members.

Name.	Constituency.	Party.
The Rt. Hon. Christopher Addison, M.D., F.R.C.S.	Shoreditch ..	Co. Liberal.
Sir Wm. Watson Cheyne, Bt., K.C.M.G., C.B., D.Sc., F.R.C.S.	Scottish Universities ..	Co. Unionist.
Capt. W. E. Elliot, *M.C.*, B.Sc., M.B.	Lanark ..	Co. Unionist.
A. C. Farquharson, Esq., B.Sc., M.D., D.P.H. ..	Leeds, N. ..	Co. Liberal.
Lt.-Col. F. E. Fremantle, O.B.E., M.A., M.B., F.R.C.S.	Mid. Herts ..	Co. Unionist.
B. F. P. McDonald, Esq., M.D.	Wallasey ..	Co. Unionist.
Major J. E. Molson, M.D., M.R.C.S., L.R.C.P. ..	Gainsborough ..	Co. Unionist.
Donald Murray, Esq., M.B., C.M.	Western Isles ..	Liberal.
Lt.-Col. Nathan Raw, C.M.G., M.D., F.R.C.S.E.	Liverpool, Wavertree	Co. Unionist.
Sir William Whitla, M.A., D.Sc., M.D.	Queen's, Belfast	Unionist.
Sir Robert Woods, B.A., M.B., F.R.C.S.I. ..	Dublin Univ. ..	Independent.

All except four of these are, we believe, seeking re-election to the new Parliament on Nov. 15th. Sir Watson Cheyne, who presided for long at the meetings of the medical group, is retiring in favour of Sir George Berry, F.R.C.S. Edin., LL.D., as a candidate for the Scottish Universities. Dr. A. C. Farquharson, a watchful curator of medical interests inside and outside the House, is not standing again. Dr. Nathan Raw, who was latterly chairman of the medical group, has retired owing to his appointment as Lord Chancellor's Visitor in Lunacy in succession to Sir James Crichton-Browne. We lose the help of Sir Robert Woods as his university is no longer represented at Westminster.

New Candidates for the Suffrage.

The ranks of the medical M.P.'s who are again standing are supplemented by a large number of other medical candidates, several of whom have sat in previous Parliaments or unavailingly contested seats. At least one medical woman is standing. The Federation of Medical and Allied Services (12, Stratford-place, London, W. 1) is putting its machinery at the disposal of 14 medical candidates, along with eight lay Fellows of the Federation who have at heart the interests of professional men and women engaged in providing the health services of the country. The Parliamentary Elections Committee of the British Medical Association (429, Strand, London, W.C. 2), in accordance with its object of ensuring the presentation to Parliament of expert medical opinion on matters relating to national health or involving the welfare of the medical profession, is officially supporting two candidates. The Medical Practitioners' Union (14, Gray's Inn-square, London, W.C. 1) is supporting and largely financing a candidate of its own. Besides these a considerable number of candidates are relying upon the help of the Labour Party or their own record of personal service in the locality. Topographically arranged, the names, as far as they have been communicated to us, are as follow:—

Universities.

London: Sir S. Russell-Wells (U.)
Combined English: Dr. S. C. Lawrence (Ind. U.)
Scottish: Sir George Berry (U.)
Queen's, Belfast: Sir William Whitla (U.)

London and District.

Bermondsey, West: Dr. Alfred Salter (Lab.)
Camberwell, North-West: Dr. H. B. Morgan (Lab.)
Hackney, Cent.: Col. Arthur Lynch (Lab.)
Islington, East: Dr. Ethel Bentham (Lab.)
Kensington, North: Dr. C. W. Hayward (L.)
Shoreditch: Rt. Hon. C. Addison (L.)
Southwark, North: Dr. L. Haden Guest (Lab.)
Walthamstow, East: Dr. H. B. Brackenbury (L.)
Wimbledon: Dr. R. O. Moon (L.)

English Boroughs.

Birmingham, Ladywood: Dr. R. Dunstan (Lab.)
Leicester, West: Dr. G. E. Spero (L.)
Manchester, Withington: Dr. T. Watts (U.)
Newcastle-on-Tyne, North: Dr. R. W. Simpson (L.)
Plymouth, Sutton: Dr. H. Wansey Bayly (Ind. U.)
Southampton: Dr. E. H. Stancomb (Ind.)
Sunderland: Dr. V. H. Rutherford (Lab.)
Wallasey: Dr. B. F. P. McDonald (U.)

English Counties.

Durham, Chester-le-Street: Dr. D. F. Todd (U.)
Essex, Saffron Walden: Dr. R. McNair Wilson (L.)
Hertford, St. Albans: Dr. F. E. Fremantle (U.)
Lancaster, Newton: Dr. H. B. Bates (U.)
Lindsey, Gainsborough: Dr. J. E. Molson (U.)
Surrey, Epsom: Mr. Somerville Hastings (Lab.)
Yorkshire, Normanton: Dr. E. G. Bearcroft (N.L.)

Wales.

Carmarthen, Llanelly: Dr. J. H. Williams (Lab.)

Scottish Burghs.

Glasgow, Partick: Sir John Collie (N.L.)

Scottish Counties.

Dumfries: Dr. W A. Chapple (L.)
Inverness, Western Isles: Dr. Donald Murray (L.)
Lanark: Capt. W. E. Elliot (U.)

Some Personal Records.

Some of the candidates have already issued election addresses, others have supplied us with an outline of their claim for suffrage. The following notes, arranged in alphabetical order, are incomplete, and we shall be glad to correct or amplify in our next issue, which will appear still a few days before the election.

Rt. Hon. Christopher Addison, M.D. Lond., F.R.C.S., is standing again for Shoreditch as a Liberal, not Coalition.

Ethel Bentham, M.D. Brux., L.R.C.P. Edin., who is standing for East Islington as a Labour candidate, has identified herself as a general practitioner with the measures directed against infantile mortality by the Women's Labour League. She has been a member of the Labour Party for 20 years. Her chief point in this election is the national health, especially in connexion with overcrowding and housing, for which she advocates a vigorous fighting policy. She is in favour of a large extension of medical services for children under school age, and also for those between school age and the age of coming under the National Insurance Acts. She is in favour of the national insurance principle, but regards the Acts as in need of revision and reorganisation.

Sir George Berry, F.R.C.S. Edin., LL.D., is standing for one of the Scottish Universities' seats with the support of the Universities' Unionist Associations. His experience of hospital administration includes a period of five years as representative of the Royal College of Surgeons of Edinburgh on the Board of the Edinburgh Royal Infirmary. During the war he organised and had charge of the principal eye centre in Scotland in the 2nd General Hospital.

H. B. Brackenbury, M.R.C.S. Eng., ex-Mayor of Hornsey and Chairman of the Insurance Acts Committee of the British Medical Association, is standing, with the official support of the Association, as a Liberal (without reservation) for East Walthamstow. In his view the need for strengthening medical representation in Parliament, both for the professional and national good, and especially for securing suitable representation of medical men in actual practice, is so urgent that he claims support from all who are not strongly antagonistic on the political side. A clear statement of professional position is urgently required in the immediate future. (Headquarters: Danecourt, Church Hill, Walthamstow, London, E. 17.)

Robert Dunstan, M.R.C.S. Eng., Barrister-at-Law, is standing as a Labour candidate for the Ladywood Division of Birmingham. He has stood for Parliament three times previously, on the last occasion winning 6000 votes in the Rusholme (Manchester) bye-election in 1919. With his wife, Dr. Margaret Dunstan, he is in practice at Walworth. As a Socialist, he believes that a fundamental change must be made in society and that the medica

profession should aid the change. He is mainly concerned with the panel practitioner's position and would like to see the guild system applied to the National Health Service.

Walter Elliot Elliot, *M.C.*, M.B., Ch.B. Glasg., D.P.H., Capt. R.A.M.C. (S.R.), is standing again for Lanark Division as a Unionist. Although one of the Chamberlain minority at the Carlton Club vote, he hopes for coöperation with National Liberals. Captain Elliot was secretary of the medical group in the late Parliament.

Leslie Haden Guest, *M.C.*, M.R.C.S., Maj. R.A.M.C., is standing as Labour candidate for North Southwark. As school medical officer and consulting physician to St. George's School Clinic, Blackfriars, he is well known in the constituency which he also represents in the London County Council.

Somerville Hastings, M.S.Lond., F.R.C.S., is standing for the Epsom Division of Surrey in the Labour interest He is giving prominence in his programme to matters of public health, and his election address gives foremost place to the care of the physical needs and education of the children of the coming race. The complete neglect of public health consideration in recent legislation has been due, he considers, to some considerable extent to the absence of medical men in Parliament.

Sidney C. Lawrence, M.B., Ch.B. Birm., late medical officer of health for Edmonton and hon. secretary of the Society of Members of the Royal College of Surgeons of England, is a candidate (along with W. Barnard Faraday, LL.B. Manc). for the 7 combined English Universities. He is approved by the Graduates' Conservative Association.

Arthur A. Lynch, M.R.C.S. Eng., Col. A.M.S., late M.P. for Galway and West Clare, is standing as Labour candidate for Central Hackney. He writes that he is a champion of the high status of the medical profession and desires to give a prodigious extension to scientific education and its applications. When in Parliament he endeavoured to form a group of medical men.

John Elsdale Molson, M.D. Camb., is standing again for his old constituency of Gainsborough as a Conservative, keeping up friendly relations with the National Liberals. Public health takes an important place in his candidature. As a member of the medical group of the House of Commons he would welcome the more general practice of societies sending representatives to give their views and aims personally to the medical committee.

Robert O. Moon, M.D. Oxf., F.R.C.P., who is standing as Liberal candidate for Wimbledon, is following President Wilson's injunction to medical men to take part in public affairs and contribute a particular form of knowledge useful to the Commonwealth.

H. B. W. Morgan, M.B., Ch.B. Glasg., D.P.H., is Labour candidate for North-West Camberwell, and accepts in its entirety the programme of the Labour Party. A scholar and medallist at Glasgow, he has held resident appointments at children's hospitals and is in general practice in Greenwich. He believes the principles for which he stands will benefit alike the community and the medical profession.

Sir Sydney Russell-Wells, M.D. Lond., F.R.C.P., is standing in the Conservative interest for the University of London, with the official support of the British Medical Association and as the official candidate of the University of London Unionist Association. He represents the University on the General Medical Council, has been a member of the Senate for 20 years, and has recently resigned the Vice-Chancellorship. He is engaged in post-graduate teaching. He regards the health of the people as of primary importance, but believes that improvement could be made and economy effected at the same time.

V. H. Rutherford, M.A., M.B. Camb., who is standing as Labour candidate for Sunderland, represented the Brentford Division of Middlesex in the 1906–10 Parliament. The advantage to the nation of medical men in Parliament he construes thus: that human values would prevail over economic values, that a higher standard of life (housing, schooling, health) would be deemed more important to the happiness of the people and the security of the nation than big armies and navies, that the prevention of disease, poverty, and unemployment would be considered vital things.

Alfred Salter, M.D. Lond., D.P.H., is standing for the third time in the Labour interest for West Bermondsey. Following a brilliant academic career, his life has been spent among the poor of Bermondsey, and he has been successful in inaugurating one of the best examples of team-work in insurance medical practice. Among his local benefactions is a coöperative bakery.

Ernest H. Stancomb, M.B., C.M. Edin., is standing for Southampton as an Independent candidate, not pledged to or supported by any political party, believing that the present need is not so much for a party as for a new policy with a better spirit and clearer vision. He was president for two years of the Medical Practitioners' Union and took an active part in shaping its policy. He is demanding that physical fitness, mental equipment, and moral stamina should receive their just claim in the first stage of legislation. In this constructive sense he desires to stand in the interest of National Health.

Thomas Watts, M.D. Durh., B.Sc., president of the Association of Certifying Factory Surgeons, is contesting the Withington Division of Manchester as a Conservative. Dr. Watts states that, if elected, he would always regard himself in part as a member for the medical profession. He is much interested in industrial hygiene and gave evidence on "shuttle-kissing" at the Home Office Enquiry. For seven years he was a member of the Cheshire Insurance Committee, as well as of the local medical and panel committees. With this equipment he hopes to do good work for the medical profession in Parliament.

Sir William Whitla, M.D. Q.U.I., LL.D., D.Sc., is standing again for Queen's University, Belfast, which still has representation in the British Parliament. He expects no opposition.

Robert McNair Wilson, M.B., Ch.B. Glasg., Liberal candidate for the Saffron Walden Division of Essex, stands for a well-clad, well-fed people, an ideal which cannot be achieved without cutting down waste. Preventive medicine is not waste, but schemes of preventive medicine may be.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY, Nov. 9th.—List of probable papers:—Prof. H. E. Armstrong: Studies on Enzyme Action.—XXIII. Homo- and Hetero-lytic Enzymes. Prof. A. V. Hill and W. E. L. Brown: The Oxygen-dissociation Curve of Blood and its Thermodynamical Basis. Dr. H. Hartridge and F. J. W. Roughton: The Velocity with which CO replaces Oxygen from its Combination with Hæmoglobin—Parts I. and II. (communicated by Prof. F. G. Hopkins). L. T. Hogben: Studies on Internal Secretion.—I. The Effect of Pituitary (Anterior Lobe) Injection upon Normal and Thyroidectomised Axolotls (communicated by Prof. E. W. MacBride). L. T. Hogben and F. R. Winton: The Pigmentary Effector System.—II. (communicated by Prof. E. W. MacBride). A. Fleming and V. D. Allison: Further Observations on a Bacteriolytic Element found in Tissues and Secretions (communicated by Sir Almroth Wright).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, Nov. 6th.

TROPICAL DISEASES AND PARASITOLOGY: at 8.30 P.M.

Lieut.-Colonel H. Marrian Perry: Some Observations on the Occurrence of Leishmania in the Intestinal Tissues in Indian Kala-azar, the Pathological Changes and their Possible Significance.

Paper:

Dr. Khalil: On the Morphology of Gastrodiscoides Hominis from the Napu Mouse Deer.

Demonstration:

Prof. Leiper and Miss LeBas: Demonstration of some Stages in the Development of Helminths.

Tuesday, Nov. 7th.

ORTHOPÆDICS: at 5.30 P.M. (Cases at 5 P.M.)

Cases: The following will be shown by:—

Mr. H. A. T. Fairbank: Two cases of Ischæmic Paralysis.

Mr. Maynard Heath: Case of Subluxation of Inner Curve of Clavicle, Skiagram of Traction Fracture of Small Trochanter.

Cases will also be shown by Mr. Laming Evans, Mr. Elmslie, Mr. Rowley Bristow, and others.

PATHOLOGY: 8.30 P.M.

Laboratory Meeting in the Laboratory of the Imperial Cancer Research Fund, 8, Queen-square, Bloomsbury.

Dr. A. N. Begg: Carcinomatous Infiltration of Nerves.

Dr. A. H. Drew: The Conditions for Growth In Vitro.

Dr. W. Cramer: Blood Platelets.

Dr. B. R. G. Russell: Intra-cerebral Tumour Heteroplasty.

Dr. J. A. Murray: Multiple Primary Cancer.

Wednesday, Nov. 8th.

SURGERY: SUB-SECTION OF PROCTOLOGY: at 5.30 P.M.

Informal Discussion:

On Gonorrhœal Stricture of the Rectum and its Treatment, to be opened by the President, Sir Charters Symonds.

Social Evening.

Fellows, Members of Sections, Associates, and their friends will be received by the President, Sir William Hale-White, and Lady Hale-White, at 8.30 P.M.

Sir John Bland-Sutton will deliver a short Address at 9 P.M. entitled "Spolia Nemoralia: Shrunk Human Heads, Labrets, and Ear-plugs."

The Library will be open, and various objects of interest will be exhibited. Music, light refreshments, and smoking.

Thursday, Nov. 9th.

NEUROLOGY: Clinical Meeting at 8 P.M.

Friday, Nov. 10th.

CLINICAL: *at the London Hospital* (by invitation of the Medical and Surgical Units).

Tea will be served at 4 P.M.

Cases will be on view until 5 P.M., when the meeting will commence.

OPHTHALMOLOGY: at 8.30 P.M. (Cases at 8 P.M.)

Clinical Evening:

Cases and Specimens. The following will be shown by:—

Mr. Humphrey Neame: Retinitis Circinata.

Two Specimens of Calcareous Lenses Dislocated into Anterior Chamber.

Mr. Montague L. Hine: Congenital Dislocation of Lenses.

N.B.—Owing to the Joint Meeting with the Section of Medicine on Tuesday, Nov. 28th, which may be continued on Dec. 8th, the Clinical Meeting announced in the Calendar for December is being held in November instead.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.

TUESDAY, Nov. 7th.—5 P.M., FitzPatrick Lecture:—Dr. R. O. Moon: Philosophy and the Post-Hippocratic School of Medicine.

THURSDAY.—5 P.M., Second FitzPatrick Lecture.

FELLOWSHIP OF MEDICINE POST-GRADUATE LECTURES, 1, Wimpole-street, W.

THURSDAY, Nov. 9th.—5 P.M., Mr. Zachary Cope: Some Important but Ignored Symptoms in Acute Abdominal Disease.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY, Nov. 6th.—10.30 A.M., Mr. Maingot: Surgical Pathology. 12.15 P.M., Dr. Burnford: Pathological Demonstration. 4.30 P.M., Dr. Scott Pinchin: Physical Signs in Pulmonary Disease.

TUESDAY.—10 A.M., Dr. Paterson: Demonstration of Medical Cases. 12 noon, Mr. Sinclair: Surgical Diseases of Abdomen. 4.30 P.M., Mr. Addison: Hare Lip and Cleft Palate.

WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 12 noon, Mr. Simmonds: Demonstration of Fractures. 4.30 P.M., Mr. D. Armour: Surgery of the Pancreas.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 12 noon, Dr. Scott Pinchin: Disease of the Heart. 4.30 P.M., Dr. James Taylor: Ocular and Visual Conditions in Nervous Disease.

FRIDAY.—11 A.M., Dr. McDougal: Electrical Department. 12.15 P.M., Dr. Burnford: Applied Pathology. 4.30 P.M., Dr. Owen: Diagnosis of Renal Disease.

SATURDAY.—9 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Simmonds: Orthopædics.

Daily, 10 A.M. to 6 P.M., Saturdays 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: OCT.–DEC., 1922.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, Nov. 6th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Clinical Lecture: Dr. Aldren Turner.

TUESDAY, Nov. 7th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Lecture:—Compression of the Spinal Cord Amenable to Surgical Treatment: Mr. Armour.

THURSDAY, Nov. 9th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Lecture:—Cerebellar Disease: Dr. Gordon Holmes.

FRIDAY, Nov. 10th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Clinical Lecture: Dr. Saunders.

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

Lecture on NEURO-OPHTHALMOLOGY (in the Lecture Theatre). WEDNESDAY, Nov. 8th.—3.30 P.M., Optic Atrophy: Mr. Leslie Paton.

N.B.—Not more than fourteen Candidates can attend this Course.

Lectures on NEURO-PATHOLOGY. MONDAY, Nov. 6th.—12 noon, Syphilis of the Nervous System, I. THURSDAY, Nov. 9th.—12 noon, Syphilis of the Nervous System, II.: Dr. J. Godwin Greenfield.

The fee for the whole Course, including Mr. Paton's Lectures, is £14 14s.; but these Lectures may be taken separately for a fee of £6 6s. Any part of the Course may be taken separately at a special fee. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the office on entering for the Course.

C. M. HINDS HOWELL, Dean of Medical School.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James' Hospital, Ouseley-road, Balham.

FRIDAY, Nov. 10th.—4 P.M., Mr. Swift Joly: Frequency of Micturition and its Causes.

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common.

WEDNESDAY, Nov. 8th.—9 P.M., Prof. H. Maclean: Some Modern Views on Renal Disease and their Clinical Application.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Nov. 9th.—4 P.M., Mr. Pitts: Ætiology and Prevention of Dental Caries.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, POST-GRADUATE COURSE, Westmoreland-street, Marylebone, W.

MONDAY, Nov. 6th.—5.30 P.M., Dr. R. O. Moon: Diseases of the Aortic Valve.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.

THURSDAY, Nov. 9th.—5 P.M., Dr. J. L. Bunch: Pruritus and Itching Diseases of the Skin.

UNIVERSITY OF SHEFFIELD—FACULTY OF MEDICINE. Post-Graduate Lectures and Demonstrations.

TUESDAY, Nov. 7th.—3 P.M. (at the Royal Infirmary), Dr. Hallam: Some Points in the Treatment of Common Skin Diseases. 4 P.M., Dr. Mouat: Recent Advances in the Treatment of Genito-Urinary Diseases.

FRIDAY.—3 P.M. (at the University), Prof. Douglas: Exudates.

MANCHESTER FRENCH HOSPITAL, 24, Acomb-street, Whitworth Park.

THURSDAY, Nov. 9th.—4.30 P.M., Dr. A. C. Magian: Bladder Diseases and Disorders in Women.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.

TUESDAY, Nov. 7th.—4.15 P.M., Dr. A. E. Barclay: Demonstration of the New X Ray Department of the Royal Infirmary.

FRIDAY.—4.15 P.M., Dr. E. S. Reynolds: Neuritis.

SALFORD ROYAL HOSPITAL POST-GRADUATE LECTURES.

THURSDAY, Nov. 9th.—4.30 P.M., Mr. Garnett Wright: On the Common Diseases of the Rectum.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.

Lectures on Maternity, Child Welfare, and School Hygiene.

WEDNESDAY, Nov. 8th.—4 P.M., Dr. Margaret Rorke: The Problem of the Syphilitic Child.

Appointments.

BOWER, A. H., M.B., B.S. Durh., and HOLMES, DOROTHY, M.B., B.S. Durh., have been appointed Head and Assistant Medical Officers respectively to the Sunderland Poor-law Institution.

CAMERON, D. H., M.B., Ch.B. Edin., Assistant Medical Officer to the Gateshead Mental Hospital, Stannington.

GARSCUDDEN, A. V., M.B., Ch.B. Glasg., House Surgeon, Clayton Hospital, Wakefield.

HUTCHESON, D. A., M.D. Aberd., D.P.H., Resident Medical Officer, Royal National Sanatorium for Consumption and Diseases of the Chest, Bournemouth.

MCCULLAGH, A. C. H., M.D., B.S. Durh., Certifying Surgeon under the Factory and Workshop Acts for the Bishop Auckland District of the County of Durham.

RITCHIE, F., M.B. Aberd., D.P.H., Medical Officer and Public Vaccinator, Stockton Union.

VERCOE, R. H., M.R.C.S., L.R.C.P. Lond., D.P.H. Oxf., Medical Officer and School Medical Officer for Chelmsford.

Hampstead General and North-West London Hospital: OGILVIE, W. H., M.Ch. Oxf., F.R.C.S. Eng., Surgeon to Out-patients; SAXBY WILLIS, F. E., M.B., B.S. Lond., and ODDY, H., M.B., Ch.B. Oxf., M.R.C.P. Lond., Physicians to Out-patients.

Vacancies.

For further information refer to the advertisement columns.

Bermondsey Borough Maternity and Child Welfare Department.—Asst. M.O. £600.

Bolingbroke Hospital, Wandsworth Common, S.W.—Hon. Surg.

Brighton County Borough Sanatorium.—Res. M.O. £350.

Cancer Hospital, Fulham-road, S.W.—Asst. Surg.

Charing Cross Hospital.—Asst. P. £100.

Evelina Hospital for Children, Southwark, S.E.—Hon. P. to Out-patients. Also H.P. £160.

Great Yarmouth Hospital.—H.S. £150.

Hackney Union.—Dist. M.O. £160.

Harefield, Middlesex, County Tuberculosis Sanatorium.—Third Asst. Res. M.O. £400.

Kingston Union, Kingston-upon-Thames.—Second Asst. M.O. £300.

Leeds General Infirmary.—Orthop. H.S.

London Fever Hospital, Liverpool-road, Islington, N.—Hon. Asst. P.

London Lock Hospital, 91, Dean-street, W.—Hon. S. to Out-patients.
Manchester, Ancoats Hospital.—Anæsthetist. 10*s.* 6*d.* per attendance.
Manchester, Monsall Fever Hospital.—Third Asst. M.O. £250.
Manchester Royal Infirmary.—Res. M.O. £250.
Metropolitan Ear, Nose, and Throat Hospital, Fitzroy-square, W.—Asst. S. Also Clin. Asst.
Nottingham General Hospital.—Res. Cas. O. £250.
Paddington Green Children's Hospital, W.—Phys. to Out-patients. Also Radiologist.
Preston Union.—Res. M.O. £400.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. P.
Queen Mary's Hospital for the East End, E.—Hon. Asst. S.
Rochdale Infirmary and Dispensary.—Jun. H.S. £200.
Royal Free Hospital, Gray's Inn-road, W.C.—Surg. Reg. £250.
Royal Northern Hospital, Holloway.—H.S. £150. Also Obstet. Phys.
Sheffield Royal Infirmary.—H.S. £150.
Westminster Hospital, Broad Sanctuary, S.W.—Med. Reg. and Cas. M.O. £250.
Whitehaven and West Cumberland Infirmary.—Res. H.S. £225.
The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointment: Perranporth (Cornwall).

Births, Marriages, and Deaths.

BIRTHS.

ALTOUNYAN.—On Oct. 24th, at Aleppo, the wife of Captain Altounyan, R.A.M.C., of a son.

MARRIAGES.

HARVEY-KELLY—NUTTALL.—On Oct. 25th, at St. Peter's, Walton-on-the-Hill, by the Rector, the Rev. Granville Borlase, M.A., Major Charles Hamilton Harvey-Kelly, D.S.O., 129th Baluchis, Indian Army, second son of the late Colonel Harvey-Kelly, Indian Army, and of Mrs. Harvey-Kelly, of Buckingham, to Sybil Mary Nuttall, M.B., B.S., D.P.H., younger daughter of Harry Nuttall, Esq., J.P., of Manchester and Walton-on-the-Hill, Surrey.
HASTINGS—PATON.—On Oct. 24th, at the East Church, Stirling, Thomas Ernest Hastings, M.C., M.B., Ch.B., D.P.H. Edin., to Beatrice Holbrow, only daughter of Robert Henderson Paton, M.A., and Mrs. Paton, of Brentwood, Granville-square, Scarborough.
YOUNG—HOLYOAKE.—On Oct. 28th, at Holy Trinity Church, Stratford-on-Avon, Alexander Waugh Young, M.C., M.D., F.R.C.S. Edin., to Maud, younger daughter of Frank Holyoake, Esq., of Bromsgrove, Solicitor.

DEATHS.

BEAMISH.—On Oct. 26th, suddenly, at Leinster-square, Bayswater, Lieut.-Colonel Robert Talbot Beamish, R.A.M.C., retired.
HILL.—On Oct. 26th, at 202, Green Lanes, N. 4, Leopold George Hill, M.D. (Durham), Fellow Society of Tropical Medicine and Hygiene, aged 55 years.
WATTS.—On Oct. 23rd, at his residence, "High Beech," Parkstone, Dorset, Alfred Thomas Guy Watts, B.A., M.B. Camb., aged 64 years.

*N.B.—A fee of 7*s.* 6*d.* is charged for the insertion of Notices of Births, Marriages, and Deaths.*

PENRITH HOSPITAL EXTENSION.—The enlarged Penrith Cottage Hospital was opened by the Countess of Lonsdale on Oct. 4th. Founded in 1898, in commemoration of the Jubilee of Queen Victoria, the hospital—which contained eight beds and two cots—dealt with more than 2000 cases up to the early part of this year, when it was closed to permit of extensions being made. Lord Lonsdale gave the necessary land for the extension, and £5000 were quickly subscribed by residents in the district served. A new block has been added, containing two large wards of two beds each for special cases, with bathrooms, linen-store, &c.; the addition of a new bathroom has enabled the old bathroom to be converted into an X ray room. The former operating theatre has been converted into an anæsthetic and dressing room, and a new operating theatre and sterilising room have been erected. Two new floors have been added to the domestic block: an independent hot-water supply system has been installed and the building has been fitted with electric light throughout. The hospital has now been brought up to the highest modern standard, and the former lack of space is no longer felt. At the opening ceremony Mr. R. H. Thompson, chairman of the hospital committee, said that he was very glad that in the country generally opinion was against State-aided or State-run hospitals. Quoting a letter which accompanied a recent large donation to the London hospitals, he concurred in the sentiments expressed by the writer of the letter, who said that among the many reasons for the maintaining of voluntary hospitals was the outlet thus afforded for generous and charitable impulses. Lady Lonsdale in a short speech declared the hospital reopened.

Notes, Short Comments, and Answers to Correspondents.

PROFESSIONAL UNITY: AN INTROSPECT.*

BY A. E. CARVER, M.D. CAMB., M.R.C.P. LOND.

INTIMATELY connected in our daily work though we are, nurse and physician, I often think that we do not sufficiently appreciate each other's standpoint and difficulties in the varying conditions under which we are called upon to perform our duties. I think that we are sometimes apt to forget how essential it is that we should work, not only together but in unison, to forget that we are but members of one fraternity, that each of us is but the complement of the other. And if, between *us*, there is sometimes a lack of complete harmony, how much more is it true that, too often, the public fails to grasp even the fringe of the difficulties with which we are beset; fails to interpret aright the spirit of our comings and our goings. This short address is an attempt (1) to make more clear to you some aspects of the physician's point of view, and (2) to indicate the lines along which we may best seek to think and work together, whether at the bedside or in our declared convictions towards the great questions of health and ethics as evidenced in daily intercourse with our fellow creatures.

The Problems of the Physician.

Few people realise to what a large extent the physician needs to deal with the past and with the future, even more than with the present. With the past in order that the future may be more clearly foreseen, with the future in order that the present may be wisely ordered. It is not in my opinion alone that insufficient emphasis has, in the past, been placed upon the question of medical history. Throughout the British teaching and practice of medicine at the present day, the constant endeavour is to get back to the early stages of disease; but patients are apt to get bored with the minutiæ of their lives of 20, 30, or 40 years ago and are in a hurry to get on with a description of those troubles from which they are now suffering. In this the nurse can help, by preaching as she goes, the need for getting down to fundamentals both in the diagnosis and treatment of disease; for it is an undoubted fact that people will often pay heed to the views of a nurse whilst scouting the same views if given by a physician. Having cleared the ground of the rubble of the past, sometimes a long and tedious proceeding, the physician must turn to contemplate the prospect of the future before he can wisely decide upon his advice for the present. Especially he must not fail to consider the probable course of events if no attempt be made to interfere; for the gibe that the "Cure is worse than the disease" is occasionally warranted, and sometmes it may be wiser to hold one's hand, lest well-meant efforts lead to disappointment or even to added discomforts for the patient.

The day is past when the chief aim of the physician was to relieve symptoms; when for every complaint there was believed to be a remedy in form of pill, powder, or potion; when empiricism was the sheet-anchor and original thought in reasoned treatment was the exception. With increased and increasing knowledge of disease, our viewpoint has changed. We now seek to deal with root causes rather than with branch symptoms. As a disciple of these truths the nurse can be of incalculable assistance. To these ends we should all seek to promote with the utmost of our influence the suggestion, already promulgated in high quarters, that all individuals should submit themselves to a periodic overhaul as a matter of routine, in order that morbid processes may be detected at the outset and measures of safety adopted before it is too late. Moreover (and this is a point that a nurse will appreciate more fully perhaps than a physician) from such a measure the further benefit would accrue that in the event of acute illness the patient might be spared the exhausting process of complete or repeated examination; for points of weakness would be known beforehand.

During many years the principle involved has been tacitly admitted in the periodic visits to the dentist paid by most careful folk. We do not wait until an aching tooth compels us to seek relief; but from experience we know that it is wiser, easier, and cheaper to have our mouths examined periodically in order that mischief may be detected at its commencement and stopped before serious damage is done. And if we pay so much respect to the teeth, why neglect to pay at least the same respect to the more vital organs? The answer, is, of course, that teeth ache horribly whereas more important structures frequently suffer in silence. Yet in extolling the advanced views of present-day medicine we may

* Abstract of an address delivered before the Torquay and District Centre of the College of Nursing on Oct. 9th.

pause to utter a word of appreciation for the work done by those shrewd old doctors of past years who attained remarkable success through their intimate knowledge of human nature and of the very limited means of treatment at their disposal. It behoves us to extend in another direction the good work begun by them; to extend the scope and influence of the profession by closer coöperation among ourselves, by uniting to form and express collective judgments in matters of health and disease, and so, by collective advocacy, to carry conviction into the consciousness of the community.

With another added difficulty we have to contend that was unknown to our predecessors. In these days, thanks in part to an unbridled lay press, patients and friends learn a wide smattering of diseases and of treatments, giving rise to many false diagnoses and preconceived impressions, which the physician needs to correct before he can secure the coöperation of the patient in embarking upon that line of treatment which is indicated by knowledge and experience. By treatment is usually meant, not merely a course of physic, although such may also prove useful, but a re-ordering of the manner of life or some radical measure undertaken to remove the cause of that trouble for which advice is sought.

In diagnostic methods, thanks chiefly to the advent of the clinical laboratory, medicine has of late years advanced into regions previously unknown. Links connecting chains of symptoms previously missing have been fitted into place, and diagnosis, the first great fundamental step in the ordering of every case, has been rendered more accurate. I have dwelt upon some of the aspects of the physician's work because the nurse usually meets him when he has reached a comparatively late stage in his dealings with the patient; when the pressing necessities of the present call for active interference and the future must be temporarily relegated to a secondary position. The most abstruse and difficult part of the physician's work may have been done, unknown to any except himself.

The Problems of the Nurse.

The difficulties and problems which face the nurse are not one whit the less than those which face the physician, but rather, I think, the more; for her duties call her to deal essentially with the troubles of the present—and present troubles, as we know, usually seem to the sufferer to be worse than those which have gone before or those which are to come in the future, or those which others have had to endure. To the nurse falls the task of first dealing with the sudden crisis arising in the course of illness, and of keeping her "head when all about .... are losing their's." To her falls the task of carrying on hour after hour, day after day, without opportunity for more than the most meagre of physical and mental refreshment, if indeed she do not forgo these altogether.

Essentials and Unessentials.

The most difficult part of her work, however, is that which does not belong specifically to her calling but which brings her in contact with the shortcomings of human nature; with patients who are uncongenial, selfish, or difficult; with friends who are suspicious, ill-mannered, and difficult; and lastly, I must in justice add, with doctors who are exacting, unapproachable, and difficult. Most of us who see so much of her work know very well that it is that greater part which we do not see that entails the greater strain upon her and is deserving of the higher praise. Often enough there are times when untold tact and patience are required, others when the nurse must stand as firm as rock in order that essential matters may be attended to; but I must not allow my opinion that the efficient and conscientious nurse has no superior to obscure the occasional presence of a fly, a tiny fly, in the ointment. There is, perhaps, not always a readiness on her part to give way to the wishes of the patient over matters that may be desirable but are not essential. For my part I would like to see more commonly a willingness to depart from rule and régime, rather a greater proportion of the human woman in the composition that goes to the making of a nurse than sometimes is the case. In a thousand little ways her sovereign will could yield to the whims of sickness without detracting either from the value of her trained services or from her own dignity. I would like to see the patient (weak though he be) who is nauseated at sight of food, or whose coated tongue indicates a stomach out of order, relieved from the pressure to take nourishment that is frequently exerted and allowed to starve until such time as nature begins to demand it. I am confident that anorexia is promoted and prolonged by too keen desire to give strength by feeding, that the means employed serve only to defeat their object; and I have not the least doubt that the fevered patient knows instinctively, far better than the attendant, whether he should take nourishment or no.

And if I shock you with heresies regarding feeding I fear I shall shock you even more with my views upon washing. Let us be clean by all means when we are well. Let us care for our patients in this respect just so far as is essential for prevention of bedsores and just so far as the patient desires; but do not let us tease our educated patients with the worrying details of an autocratic insistence which do not form an essential element in the treatment of the case.

But I am digressing. There is one essential quality—an optimistic personality. In no profession are personality and manner so great a factor as in ours, yours and mine. To be able to create an atmosphere of cheerfulness as well as confidence requires a contented mind and a spirit of optimism that is not a natural possession of all of us. Yet can we acquire them by persistence and determination to wrest from circumstances the best result that is possible; for by optimism must be understood an active mood, a determination that all *shall* be well, not a passive attitude of pious hope that all *will* be well without effort on our part; a spirit that can come only to those who are efficient, and willing to exercise their efficiency to the full.

Loyalties.

In order to put forth our best endeavour in collective work, loyalty is of paramount importance. Nurse and physician must be strictly loyal not only to each other, but to their patients and to their professions. Confidences given by either party need to be constantly guarded. In the case of the nurse personal opinions need to be constantly kept in subjection; and even then circumstances will sometimes arise in which her duty to herself or her loyalty to one party or the other compel her to keep silence no longer. So also in the case of the physician. Circumstances will sometimes arise under which it becomes evident that he cannot pursue the course that he believes to be for the greatest benefit of the patient: whether it be that he feels that the patient lacks confidence in his skill, or that he himself lacks confidence in the loyalty of the patient, or that there are outside influences over which he has no control, or that over the particular case in point the physician lacks a full confidence in himself. Whatever the cause, however difficult the situation, the proper course to adopt is perfectly clear if one principle be borne in mind: never to speak to the detriment of either patient, nurse, or physician secretly or by insinuation, but to speak boldly and face to face, without heat or feeling, that which is troubling the mind. There are two special quarters towards which our united loyalty is constantly due.

Firstly, in hospital work it frequently happens that urgent cases are admitted with a diagnosis that is not borne out by subsequent events. In such case there is sometimes an unfortunate, if natural, tendency (on the part especially of those who have more recently come to the wards) to compare the true condition of the patient with that condition from which he was supposed to be suffering according to the account given by the doctor who saw him outside. This criticism is unfair and unjustifiable. We must always remember that the conditions under which the outside doctor has seen the patient are often such as to render it very difficult to make a thorough examination, that the clamourings of anxious, and probably ignorant, friends distract from the concentration which the case itself may demand; and that the doctor's chief object has been to decide whether the case is indeed an urgent one and suitable for hospital—not only for treatment but for diagnosis. In such cases the diagnosis given by himself should always be regarded as provisional; and it is wonderful how frequently this proves to be correct.

Secondly, and particularly in spas and health resorts such as Torquay, we owe our loyalty to doctors in other parts of the country under whose care the patients have previously been, and to whose care they will return. Of all the quarters to which loyalty is due this is the one that is most apt to suffer. We cannot formulate any simple means with which to combat the difficulty, but we must only strive that neither the interests of the patient nor the honour and interests of the absent doctor should, through any word or deed of ours, be allowed to suffer.

Just as important, though less often considered, is the loyalty, in thought and word, owing to us by the patient. Of this we can often have no direct knowledge; but we are sufficiently versed in the study of human nature, to detect, as a rule, when there is any undercurrent running against us. Loyalty from this quarter would be observed more strictly than it is did patients realise to what an extent their own welfare is bound up with it; for, sooner or later the disloyalty betrays itself, the confidence of nurse or physician in the patient is shaken, and a position is created which renders first-class work extremely difficult, if not impossible. It is universally recognised that a patient must repose confidence in his physician; it is not universally recognised that the physician must repose confidence in his patient, and I imagine that the same is true as applied to the nurse. Lastly, there is the loyalty of every one of us towards each other. This broad loyalty, wrongly construed, has become a bogy to certain of the public; it is this that constitutes the whole basis of "medical etiquette." As distinct from any other form of proper behaviour medical etiquette has no existence.

In all walks of life paths of interest must sometimes intersect, but the notion that medical etiquette runs counter to the highest interests of the public can only be due to a misconception of its nature. Patients could hardly hope to secure honourable dealing and loyalty towards themselves from a profession that did not observe the same honourable dealing and loyalty within itself.

Observation Hobbies.

It is open to every one of us to draw out of our surroundings a great deal of knowledge and interest by the simple process of taking notice of details. An observant person is made, not born. Deductions, upon which correct diagnosis and treatment are founded, depend upon facts of which we can afford to lose none, for only too frequently these are both few and slender. For many of these small facts in medicine the physician must be largely dependent upon the nurse, who is in more constant and more intimate touch with the patient than he is. The nurse, therefore, should make a habit of noticing and reporting facts, however small and unimportant these may appear to be. The habit will provide her with added interest in any surroundings in which she finds herself; it will destroy self-consciousness, which mars the work and happiness of many. In the sick-room she should be content with observing; it is the physician's duty, not hers, to draw conclusions from the facts given, to make diagnosis as complete and accurate as it is possible to do. To follow a hobby is never a waste of time. It may be connected with our work or with our play and it is best to find one in both connexions. In our work the pursuit of a hobby may lead to all sorts of developments, to the acquisition of all sorts of odd bits of information, possessed by few and which may prove of real value at unexpected moments. In our play a hobby takes hold of us and drags us out from the confines of our working moods. In every town of any size there are enough nurses to form a society at which many social hobbies could be indulged; in many places hospital nurses could beg, borrow, or steal a bit of garden in which the enthusiast could raise anything from a radish to a specimen of sub-tropical culture.

The Future.

I would ask you in conclusion, in a brief flight of imagination, to take with me a glimpse into the future: when the work of all branches of the healing fraternity is concentrated in some institution on a large scale; when it is open to every member of the community there to receive at our hands the blessings of health in equal measure, in so far as such shall lie within the capacity of science to dispense; when, with the strength that is born of unity, we are collectively prepared to take up the challenge of those sects that would uproot the well-laid foundations of our calling; and when the nurse, too often the most hardly pressed and ill-requited member of the co-fraternity, has won the position to which she is entitled through the energy and perseverance of the founders of the College of Nursing.

THE NEW MEAL-POKE.

THIS publication has been prepared for the Students' Representative Council of University College, Dundee, and is a good example of the "bazaar book," whose sale is designed to help some beneficial object. The object here is the provision of a sports ground for the College and the interest, artistic and literary, of the publication should secure a real return in money. There is a striking frontispiece by Mr. Alec Grieve, with an accompanying sonnet by Dr. R. C. Buist; but the editors of the miscellancy have not depended solely on local pens and pencils, but have induced Sir James Barrie, Mr. Thomas Hardy, Mr. E. V. Lucas, and others to enrich its pages.

THE HEALTHY CHILD OF PRE-SCHOOL AGE.

WHILE there is a very large output of books dealing with the care and nurture of infants during the first year of life, the child of pre-school age has been comparatively neglected. From his wide experience as assistant professor of diseases of children at Boston University, Dr. F. H. Maccarthy has come to the conclusion that much of the illness, suffering, and deformity met with in older children might have been prevented by proper care during the first years of life; hence his handbook [1] for parents, nurses, and others interested in child welfare deals in simple language with the fundamental principles connected with hygiene, food, sleep, play, and growth, and care of the child's body and mind. The chapter on food is particularly full, and contains several excellent specimen dietaries for children of various ages. The last two chapters of the book are taken up with a brief survey of the commoner diseases, disorders, and emergencies of childhood, the advice given throughout being both sensible and practical. In the section on diphtheria allusion is made to the use of the Schick test, and the toxin-antitoxin treatment is urged for such children as are found to be susceptible. Although the volume contains little that is new either in matter or in manner, it is well planned, and fulfils its purpose as a guide to the uninstructed parent.

[1] The Healthy Child from Two to Seven. By Francis Hamilton Maccarthy, M.D. New York: The Macmillan Company. 1922. Pp. 235. 7s.

DESTITUTE RUSSIAN REFUGEES: AN APPEAL.

To the Editor of THE LANCET.

SIR,—The Russian Red Cross Society (old organisation) makes an urgent appeal at the present time to all kind friends and sympathisers for help for the destitute Russian refugees. These unfortunate persons, deprived of their own mother country, are scattered all over the world. The society is doing its utmost to provide at least the minimum of help necessary, but is greatly handicapped by lack of funds. The majority of the Russian refugees are living in Serbia, Bulgaria, and other Balkan States. Though helped to a certain degree by the Governments of these countries, they are in a very distressed condition. One of their chief needs is medical help, for which surgical instruments are very sadly lacking. Thousands are suffering, and help is urgently needed.

The Russian Red Cross, therefore, plead for assistance, by donations in money or in surgical instruments—even old and used ones. Such donations will be most gratefully received at the offices of the society, Chesham House, Chesham-place, London, S.W. 1.

We are, Sir, yours faithfully,

D. ZINOVIEFF,
Special Delegate of the Russian Red Cross for Great Britain;
B. BELILOVSKY, M.D.,
Oct. 31st, 1922 Medical Adviser to Russian Red Cross.

SHAKESPEARE AND THE CIRCULATION.

THE problem of "Who wrote Shakespeare's poems?" is an old one, but until recently most reasonable people interested in the subject have been content to accept William Shakespeare of Stratford as the author, or at least to maintain an agnostic attitude of mind. Some of these may have been shaken by the claims put forward on behalf of William Stanley, sixth Earl of Derby, by Mr. Abel Lefranc,[1] who published a book on this subject, which appeared three years ago, and is now attracting some attention. But while M. Lefranc is able to bring forward certain facts or coincidences in support of his thesis, he appears to us to have carried his argument too far at one point where it impinges on medical science. He maintains that the writer of the plays shows a greater familiarity with contemporary medicine than could possibly have been acquired by the Stratford player, and suggests that a passage in *Coriolanus* shows a knowledge of Harvey's theory of the circulation many years before this had been given to the world. The passage in question is put into the mouth of Menenius, who gives the belly's answer to the body's rebellious members, and is as follows:—

> "True it is, my incorporate friends," quoth he,
> "That I receive the general food at first,
> Which you do live upon: and fit it is;
> Because I am the store-house, and the shop
> Of the whole body: But if you do remember,
> I send it through the rivers of your blood,
> Even to the court, the heart,—to the seat o' the brain;
> And, through the cranks and offices of man,
> The strongest nerves, and small inferior veins,
> From me receive that natural competency,
> Whereby they live: And though that all at once,
> You, my good friends . . . . cannot
> See what I do deliver out to each;
> Yet can I make my audit up, that all
> From me do back receive the flour of all,
> And leave me but the bran."
>
> —*Coriolanus, Act* 1, *sc.* 1.

There is nothing in these oft-quoted lines to justify an assumption that they are based upon knowledge of Harveian circulation. The teaching of Galen, as summarised by Dr. Arnold Chaplin in his Harveian Oration,[2] would be a sufficient basis for the lines, since nothing is necessarily implied beyond the ebb and flow of blood in veins and arteries.

[1] Sous le masque de William Shakespeare. Par Abel Lefranc. Paris. 1919. Vol. i., p. 62. [2] THE LANCET, Oct. 21st, 1922.

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